North Coast LRMP

Base Case Socio-Economic Report (draft)

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Base Case Socio Economic Summary Matrix

Account	*Status and Outlook*
Socio Community Account	

General Community	• The Plan Area's 2001 Census population was 16,708 persons. About 85% of the population is in Prince Rupert. Most of the remaining population live in relatively remote coastal communities accessible by water or air.
	• Census data indicates that Prince Rupert's population fell sharply since 1996. This may be attributed to out-migration of persons seeking better economic opportunities.
	• Relative to the general provincial population, the Plan Area population
	  • Is younger, with higher proportion in the under 45 years age group
	  • Has higher average household income
	  • Is not attaining the provincial level of education attainment
	  • Has a lower life expectancy
	  • Subject to a lower rate of serious crime
	  • Experiences a higher level of unemployment and reliance on the public safety net
	• The long term population forecast is for continued slow growth. However, future community conditions will be greatly influenced by the future course of key industries. This includes traditional industries of harvesting and processing fish and timber, and tourism, and emerging activities such as attracting cruise ships, offshore oil and gas development, aquaculture, and various manufacturing proposals.

First Nations	• The Tsimshian Nation, Haisla Nation (Kitimaat), and Nisga'a Nation have utilised the Plan Area land base for cultural, spiritual and sustenance activities for centuries. • All of the remote communities are First Nations. For several communities there is evidence of occupation for 100's of years. • In general, community populations have been steady to slight decline during the latter 1990's with some positive growth in recent years. It is the case that the large proportion of the First Nations population does not normally reside in

	the reserve community. • Average income of the communities is well below the Plan Area average and unemployment is much higher than the Plan Area average. • Commercial fishing, forestry, public administration are the primary sources of employment in the reserve communities. Several community are exploring opportunities in timber, aquaculture, and tourism. • With respect to treaty settlement, the Nisga'a have a treaty with BC and Canada, and the Tsimshian and Haisla have signed framework agreements (1997 and 1996 respectively) to prepare for treaties. • First Nations are less inclined to permanently migrate toward economic opportunities. The outlook depends on the realisation of new economic opportunities and the circumstances in the wider Plan Area.
General Economy	• The mainstays of the Plan Area economy have historically been commercial fishing and fish processing, timber harvesting and processing, tourism (salt water fishing) and the public sector. • According to the 1996 Census, the Plan Area's experienced labour force was 9,290 persons. The corresponding value at the 1991 Census was 10,010 persons, or a decline of about 7%. Most of this decline occurred in manufacturing industry (i.e. wood processing), construction and transport. There was some growth in accommodation and food industry and health services[1]. • Since 1996, there has been a sharp drop in forest sector and fishing employment. Based on initial research completed for this Base Case report, it is estimated that there are 2,000 fewer jobs at the end of 2001 (relative to 1996), and a loss of Plan Area annual income of some $57 million/year. • Analysis of the research also indicates that at the end of 2001, the public sector accounted for 35% of Plan Area income, followed by non-employment income (20%), commercial fishing (14%), tourism (13%) and forestry (6%). • Private investment , as measured by industrial, commercial and residential building permits dropped sharply in the latter 1990's. • The economy may be at a point of transition, with the growth prospects of its traditional sectors (commercial fishing, timber harvesting and wood processing) appearing constrained. • Future growth may flow from the opportunities offered in tourism, aquaculture, offshore oil and gas development, mineral development and other industrial projects. • Future growth will depend on an expanding external economy and the Plan

[1] Release of the experience labour force Census information for the 2001 is scheduled for February 2003.

	Area's collective ability to realize potential opportunities.
Economic Development Account	
Forestry	• The timber harvesting land base is 104,469 ha., or 6% of the Plan Area and 16% of the forested land base. Most of the land is at the lower end of river valleys accessed from salt water. • The land base can sustain an annual harvest of some 573,000 $m3^2$, but actual harvest volume in recent years has been below this maximum. • The timber resource can be characterised as high and low quality old growth, remote and rugged terrain requiring high development costs. • Poor market conditions and high costs have lead to poor profitability and contraction of operations. • The forest industry will likely continue to be an important contributor to the Plan Area and provincial economies, however its outlook is dependent on the likely re-organisation of the coast forest industry as well as external market trends.
Tourism & Recreation	• The tourism industry's economic contribution to the Plan Area economy has increased in both absolute and relative terms. At the end of 2001, the sector directly employed some 1,400 persons, second only to commercial fishing among private sector industries. • There are about 140 tourism enterprises. Many are located in Prince Rupert, and others in the Plan Area's small coastal communities or floating facilities. • Salt water fishing is the dominant activity. Prince Rupert also receives a large number of "through "visitors arriving or departing by coastal ferry. • Industry activity appeared to dip in the latter 1990's but appears to be recovering. • Though still a small part of the industry, there appears to be growing interest in wildlife viewing, ocean kayaking, and other adventure based activities. • With the completion of the large cruise ship berth in 2004, the sector is expected to expand to serve the increased number of visitors during the cruise season. • There are over 300 public recreation sites in the Plan Area, most receive little use presently. • Recent trends in aggregate public recreation use appears to be negative, probably reflecting the out-migration and poor economic circumstances that

[2] Indicative harvest value because AAC determined for the TSA which is slighly larger than the Plan Area.

	have impacted the Plan Area in the latter 1990's. • There is potential to increase tourism and recreation activities. As the number of visitors and industry operators increase a co-operative and co-ordinated management approach to regulate use will help maintain "product" quality.
Minerals & Energy	• In the past century, 23 mines have operated in the Plan Area, and there are presently 22 properties with known reserves. The one current operator is re-working the Anyox smelter slag pile. • In recent years, exploration has been at a low level because of low international commodity prices and an unattractive provincial policy climate. • Areas with high and extremely high mineral potential are the head of Observatory Inlet, Pitt, Banks and Aristazabal Islands, and Ecstall/Scotia valleys. • Under the base case management regime, most of the mineral indicators are in general management zone. This is supportive for the development of future mines when external economic conditions are suitable, provincial policy becomes more accommodating, and land claim issues are addressed.

1.0 Introduction

The North Coast Land and Resource Management Planning Table is responsible for recommending a plan for land and resource use on Crown lands. The purpose of the plan is to[3]:

- Foster economic and environmental sustainability through an Ecosystem Based Management (EBM) approach, which includes the establishment of protection areas and mechanisms to ensure the maintenance of ecological integrity and healthy human communities in the plan area;

- Deliver a comprehensive system of area specific management direction that clearly describes the location of each area and its resource values, general management direction for each area, management objectives and strategies applicable to specific areas, and any implementation requirements such as policy or legislative change; and

- Identify economic, environmental, social and community transition requirements and strategies.

This Socio-Economic Base Case Report will assist the table in two respects. First, the most up to date demographic and economic characteristics of the Plan Area are presented. This gives the Table a perspective of the turbulent economic forces impacting the Plan Area in recent years. Those industries key to the Plan Area economy and dependent on Crown land and resources are examined. This includes a discussion of the nature of the relationship to Crown resources, recent economic performance, and outlook for the future. This material builds the economic context in which the recommended plan will be implemented. The second aspect is the specification of a "base case" Crown land management plan. This is the likely future management regime for the North Coast if the Table does not produce an LRMP. For the most part, the base case plan is a continuation of current management and reasonably foreseeable changes. The economy and industry outlooks are consistent with this base case management regime. This provides a benchmark which the Table may choose to exceed.

The remainder of this chapter describes the base case management regime. Chapter 2 summarises recent trends in the Plan Area's demographic and economic indicators. First Nation communities are addressed in Chapter 3. Chapter 4 reviews the timber, tourism/public recreation, and mining industries, as these are dependent on Crown resources and of economic significance.

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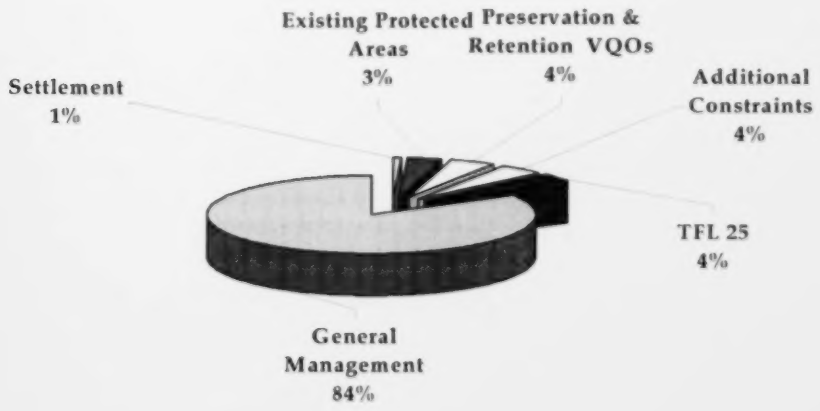
[3] *North Coast Land and Resources Management Plan Terms of Reference*, Ministry of Sustainable Resource Management, January 2002.

1.1 Base Case Management Regime

The North Coast LRMP area covers some 1.69 million hectares. The area is bounded on the west by the Pacific Ocean, and on the east by the Coast Mountains. The coastline is cut by fjords and channels, and the topography is rugged. Precipitation is common throughout the year. The climate is cool and wet and supports a lush temperate rainforest at lower elevations. Human settlements are located along the coastline. The largest community is Prince Rupert which is the regional service centre. Most of the other communities are small, located on the coast, and many are accessible only by air or water. Commercial fishing, timber harvesting, tourism, public recreation, and potentially mining, are economic activities reliant on the Crown land base. The activities are expected to occur over the land base and be subject to the base case management regime.

For the purposes of this assessment, the Government Technical Team (GTT) defined a two zone land management regime in the absences of the LRMP. One zone is outside protected areas. In this zone resource development activities are encouraged and will be managed under the principles of integrated resource management (IRM). Within the integrated resource management zone, there are sub-zones reflecting high resource values that requires special considerations and otherwise general management zone. The second zone is comprised of protected areas. It is assumed that no new protected areas are created under the base case. The distribution of the land base among the base case management zones is summarised in the following figure and Map 1.

Figure 1.1: Base Case Management Regime (1.69 milliion ha.)



The management zones are:

1) **Settlement and Private land:** Significant amounts of human activity and highly intensive land use will occur in the Settlement zone which. The land in this category is not directly subject to the LRMP. Given the Plan Area's small population, settlement land and private land total only about 15,000 ha.

2) **Existing Parks/Ecological Reserves:** These comprise an obvious zone due to the fact that extractive resource development is not allowed in such areas. The lands total some 52,000 ha., or 3% of the Plan Area land base. The largest protected area is Khutzeymateen Grizzly Bear Sanctuary covering 44,902 ha.

3) **Preservation and Retention/Partial Retention VQO Zone:** On the IRM land base, this zone is the most constraining from a timber harvesting perspective. The management objective is to design timber harvesting so to preserve sensitive visual landscape. Most of the some 75,000 ha. may be viewed from the Inside Passage or Highway 16 travel corridors. Both corridors have passing through a large number of visitors that have a high expectation of scenic quality.

4) **Additional Constraint Areas:** On the IRM land base, the constraints in this zone are somewhat less restrictive to forest harvesting than the Retention/Partial Retention VQO Zones. Included are lands subject to Partial Retention visual quality objectives for timber harvesting and community watersheds. While there is considerable flexibility with respect to managing resource development in these areas, the "costs of doing business" (e.g., increased referrals, the time period to obtain permits, etc.) may be incrementally higher than similar work in the general management zone.

5) **TFL 25:** Tree Farm License 25 is held by Doman Industries. It is an IRM zone, distinguished from the General Management zone only because the forest license is an area based tenure. It covers some 61,000 ha. in the southeast corner of the Plan Area.

6) **General Management Zone:** As the label indicates, management in this zone consists of routine review and permitting of development proposals according to IRM management principles. There are no special values to be managed for. This zone covers 1.4 million ha. or almost 85% of the Plan Area.

2.0 Socio-Economic Profile

The Plan Area has a rich and eventful history that is summarized in the *Current Conditions Report* (Section 2.1). The socio-economic profile presented here focuses on the Plan Area's performance over the past decade or so, with an outlook for the coming decade. A number of social and economic indicators are tracked to show how the community has been performing. A number of the indicators are based on Census information collected for the years 1991 and 1996. Comparable information for the 2001 Census will become available over the next several years as the information is compiled. But because the Plan Area has been subject to several substantial economic shocks since 1996, more recent information was collected (though admittedly not as comprehensive as Census methods) to provide a more up-to-date description of the Plan Area. Over time, this information may compliment, or be replaced by statistics as they become available from the 2001 Census.

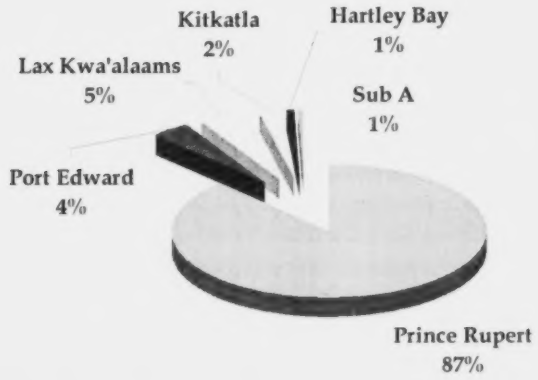
The LRMP's economic impact on the Plan Area communities will be largely indirect and diffuse. The primary effect will be on those economic activities directly reliant on the Crown land base. These activities are considered in greater detail in Chapter 4. This chapter provides an understanding of the relative economic contribution these resource based sectors make to the Plan Area as compared to the Plan Area's other key economic activities that are not directly linked to the Crown land base.

2.1 Demographic and Economic Indicators

The social and economic indicators presented in this section are intended to generally reveal trends in Plan Area conditions. Information on socio-economic variables is reported by Statistics Canada and BC Stats on a variety of geographical divisions (such as municipality, reserves), none of which correspond exactly to the Plan Area. The "best fit" is the Prince Rupert Local Health Area (LHA) plus information for Hartley Bay (outside the LHA) where the data is available. Not included in this profile is the village of Stewart and Nisga'a communities.

In March 2002, the Census 2001 population value was made public , and is presented in this report. Over the next two years additional Census information will become available.

Figure 2.1: Distribution of '01 Plan Area Population (16,708)

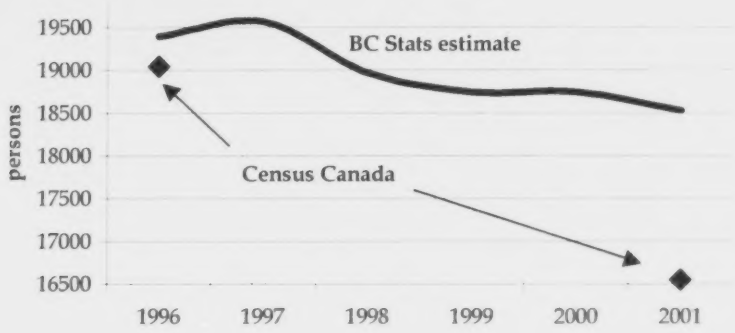


Source: Statistics Canada

Population: The population of the Plan Area in 2001 was 16,708 persons (Statistics Canada). Most of the population is located in the city of Prince Rupert as summarized in Figure 2.1.

The trend in population growth in the LHA in recent years has been sharply lower, particularly since 1996. This appears to be in response to a series of shocks that lead to contraction of the Plan Area's key industries. Figure 2.2 shows two estimates of Plan Area population. BC Stats prepares annual population estimates based on Census data and other sources (for example hydro hook-ups), whereas the Census is a complete enumeration at five year intervals. While BC Stats methods indicated a declining population , the Census indicates the decline was much sharper than anticipated. Prince Rupert's Census population declined by some 2,000 persons (or 13%). Significant decline (in the order of 20%) in the rural population was also evident.

Figure 2.2: Prince Rupert LHA Population



Source: Statistics Canada , BC Stats

In 1996, the age distribution of the LHA had a higher proportion of persons in the 0-14 age and 25-44 age groups compared to provincial distribution, and a lower proportion in the. 45+ years age group.

Family, Housing and Education Indicators: In 1996, there were 4,860 families in the Plan Area. Of these, 72% had children at home as compared to a provincial average of 60%. Single parent families made up 24% of the total families (23% in BC) . By comparison, Smithers had one of the lowest proportion of single parent families at 16%, while Greater Victoria, New Westminster and Penticton had the highest provincial rates at 30%. The average number of children per family in Plan Area is 1.9 children, which is comparable to the provincial average of 1.8 per family. Roughly one third of the households rented their dwelling in 1996, compared to a provincial average of 25%. But the proportion of families paying more than 30% of their income on housing costs was 20% as compared to provincial average of 25%.

With respect to education attainment, 33% of the Plan Area population age 25-54 were without high school completion compared to provincial average of 23%. Completion rate for post secondary education is also below the provincial average, but comparable to non-urban centres. In 1999, 41% of Plan Area students in grades 4, 7 and 10 scored below standard in provincial math exams compared to a provincial rate of 22%. Nisga'a and Queen Charlottes LHA's proportion of students scoring below standard in math was 59% and 47% respectively.

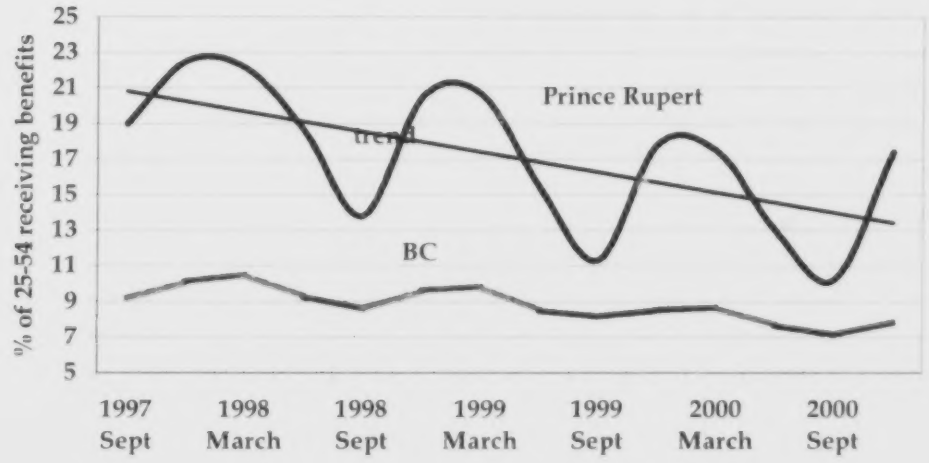
Social Indicators: The average life expectancy in the Plan Area is 76.5 years, below the provincial average of 79 years. The suicide rate of 6.8 per 1000 persons (1995-99) is higher than provincial rate of 5.3 persons per 1000. Infant mortality at 4.7 deaths per 1000 (1995-99) is slightly below the provincial average. The rate of teen pregnancies is double the

provincial average at 58 pregnancies per 1000 females aged 15-17. Average per capita alcohol consumption (per population age 19 +) of 70 litres is also well above the provincial average of 57 litres.

The serious crime rate of 16.2 per 1000 of population (1997-99) in the Plan Area is below the provincial average of 19.5. However, the Plan Area's juvenile crime rate (age12-17) at 13.1 per 1000 population is above the provincial average of 9.5. The rate of motor vehicle theft at 1.6 per 1,000 is much below the provincial average of 7.7. the rate of spousal assault at 6.7 incidents per 1000 population is above the provincial rate of 2.5. The Plan Area's crime rate during the 1990's declined at a faster rate than was the case for the province generally.

Income and Dependence on the Safety Net: In 1995, the average family income in the Plan Area was $57,663 compared to the provincial average of $56,527. The average income in the City of Prince Rupert was $59,358. The prominence of the relatively high paying resource industry jobs in the Plan Area and in Prince Rupert account for this relationship. The unemployment rate in 1996 was 16.9% (City of Prince Rupert) as compared to provincial rate of 9.6%. The seasonally of the major industries partly explains the higher unemployment rate. It is the case that the unemployment rate in NW BC throughout the 1990's was higher than the provincial average.

Figure 2.3: Dependence on Safety Net

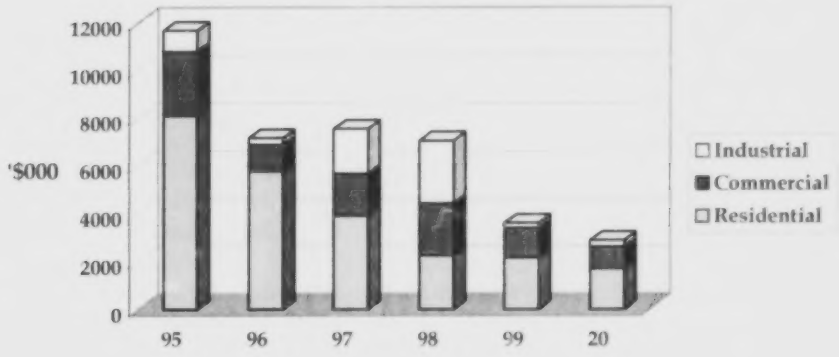


BC Stats defines the percentage of the population receiving either BC Benefits or Employment Insurance as a measure of dependence on the public "safety net". The Plan Area and provincial dependency rates are shown in Figure 2.3. The dependency rate in the Plan Area is higher, and more seasonal than the provincial rate. The surprising finding is that the dependency rate has, on trend, been declining over the period when the Plan Area

economy has been experiencing difficulties. It is suspected that other social programs (i.e. retraining assistance) not reflected in the indicator may have reduced the apparent dependence on social assistance programs. Persons dependent on BC Benefits or Employment Insurance that elected to move from the Plan Area would also tend to reduce the dependency rate. For the four quarters ending in September 2000, the Plan Area had the third highest rate of EI beneficiaries in the province. Exceeded only by Upper Skeena and Nisga'a LHA's.

Investment: An indicator of investment activity is the value of residential, commercial and industrial building permits issued. This information is available for the City of Prince Rupert and the District Municipality of Port Edward (Figure 2.4).

Figure 2.4: Value of Building Permits



Source: BC Stats

Investment in houses, stores and plants has greatly diminished in the Plan Area over the past several years. In 2000, there were only two housing starts in Prince Rupert compared to an average of 32 starts per year during the period 1990-96 (CMHC, 2001). While it is the case that building activity shrank across the province generally, it was considerably more pronounced in the Plan Area. Using 1995 as a benchmark, the value of building permits in 2000 for BC was 16% below its 1995 value. For the Plan Area, the value of building permits in 2000 was 75% below its corresponding 1995 value. The immediate consequence of this is a reduction in construction industry activity (hence direct and indirect employment associated with the construction industry). Longer term it also suggests generally reduced growth in aggregate economic production.

Labour Force: The Plan Area's labour force participation rate in 1996 was 79 persons per 100, significantly above the provincial rate of 73. The distribution of the labour force among industry categories is one indicator of the economic make-up of the community. The following table compares the distribution of the Plan Area labour force to the provincial

average, and to the Plan Area's labour force in 1991, to provide an indication of changing trends.

In 1996, the distribution of the Plan Area labour force compared to BC suggests an economy more heavily reliant on manufacturing (i.e. fish and wood processing), fishing and transportation industries as compared to the provincial economy. The proportion of service sector industries (e.g. wholesale trade, business services) is slightly underweight compared to the provincial profile. The tourism sector is mostly captured in the Accommodation, Food and Beverage industry category and the Plan Area's labour share is similar to the provincial profile.

Experienced Labour Force by Industry

Industry	Plan Area '96	Prince Rupert '96 (%)	BC '96 (%)	Plan Area, change from '91
Total Labour Force	9290			-7.2%
Agriculture & Related	55	0.6%	2.4%	0.4%
Fishing	500	5.4%	0.5%	1.1%
Logging & Forestry	170	1.8%	2.1%	0.3%
Mining	0	0.0%	0.8%	-0.1%
Manufacturing	2105	22.7%	10.4%	-4.5%
Construction	330	3.6%	7.5%	-2.5%
Transportation	935	10.1%	7.5%	-1.7%
Wholesale Trade	245	2.6%	4.8%	0.1%
Retail Trade	1095	11.8%	12.5%	-1.2%
Finance & Real Estate	325	3.5%	5.8%	0.4%
Business Services	220	2.4%	6.8%	-0.5%
Government Services	740	8.0%	5.9%	-1.2%
Educational, Health and Social Services	1,235	13.3%	16.4%	1.3%
Accommodation & Food	740	8.0%	8.4%	1.1%

Source: Statistics Canada

Relative to 1991 labour force, the experienced labour force fell by 7% in 1996. The reductions were concentrated in the manufacturing, transportation, retail trade, and government services industries. The labour force expanded in the accommodation and food, health services and fishing industries. It is the case that since 1996 certain Plan Area industries have continued to contract as discussed later in this chapter.

Economic Dependency: Economic dependency analysis is completed by BC Stats . Based on Census information (i.e. experienced labour force data presented above), the analysis identifies a community's "basic" industries[4] and allocates to them a share of the community's dependent industries. This provides a better understanding of the fundamental sources generating economic activity in the community. BC Stats published economic dependency analysis for this area corresponds to the 1996 Census data (*British Columbia Local Area Economic Dependencies and Impact Ratios-1996*, released by BC Stats May 1999). However, since that time the Plan Area economy has been impacted by several negative events that are re-shaping its economy. Some of the most identifiable and significant events include:

- reductions in the commercial fishing fleet,
- increased management constraints on recreation fishing impacting tourism business,
- blockade of the Alaska ferry impacting tourism business,
- closure of the North Coast saw mill in 2001,
- reduced, then curtailed operations of the Skeena Cellulose pulp mill,
- substantial drop in tonnage shipped through the Port of Prince Rupert,
- downsizing or re-location of government offices.

In order to have a more up to date representation of the Plan Area's economic dependencies, a brief survey of employment by major sector was conducted with some local assistance, updating employment to end-of-2001 conditions. The updated employment and income dependencies are summarised by Figures 2.5 and 6[5].

The up dated analysis indicates that at the end of 2001 there were some 2,000 fewer jobs in the Plan Area compared to the 1996 situation. This total loss is composed of loss of basic

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[4] A basic industry is one that substantially draws revenue from outside the Plan Area. Basic revenue may arise from the selling of goods (e.g. lumber, pulp, salmon) or serives (e.g. motel room to visitor). It is the case that some industries have both basic and non-basic characteristics and judgement is required in allocating between the secotrs. Transportation industry is an example, with the Port of Prince Rupert providing a basic activitiy, while local transport is non-basic. Government services, from a Plan Area perspective, is a basic industry since public services do not directly depend on Plan Area tax payments and other government charges. As recently confirmed by the work by BC Stats for the Vancouver Board of Trade this is not a valid assumption at the provincial level of analysis.

[5] Note, the analysis excludes Indian Reserves.

industry employment and dependent employment. . The loss of basic jobs was some 1,540 positions (pulp and paper, saw mill, fishing and public sector). Most of these industries have relatively high business spending (i.e. goods and services necessary to operate the business) and high wages, hence the reduction in dependent employment of 540 is large. It is estimated the total Plan Area after tax annual payroll fell $57 million per year compared to 1996. The shutdown of the SCI pulp mill and the NW saw mill accounted for the fall of the forest sector's economic contribution from roughly 20% in 1996 to around 6% at the end of 2001. Commercial fishing's (harvesting and processing) contribution also shrank. However, employment and incomes increased slightly for the Tourism sector over the period, continuing the trend evident since 1991. With the contraction of the other basic sectors, the Tourism sector was the largest private sector employer at the end of 2001. The relative dependency on the Public Sector also increased over the period.

Figure 2.5: North Coast Estimated Employment Dependencies, 2001

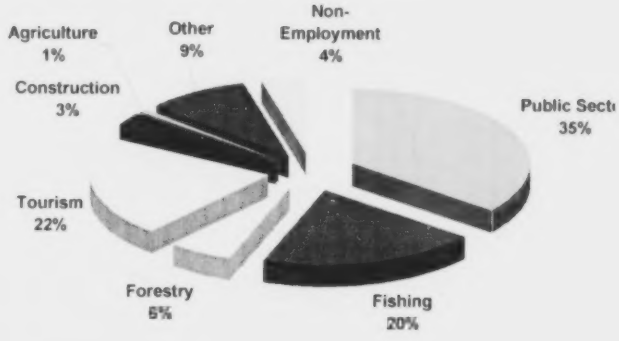
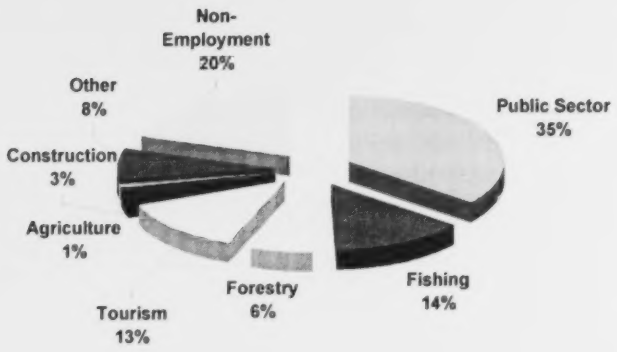


Figure 2.6: North Coast Estimated Income Dependency, 2001



2.2 Sectors not dependent on the Crown land base

In order to provide a full picture of the economy, a brief description of the economically significant industries not directly reliant on the Crown land base (hence not directly influenced by the LRMP) is provided.

Commercial Fishing and processing: Included here is the fishing for Pacific salmon, groundfish and shell fish. Commercial fishing for the five species of salmon has long been the foundation for the industry in BC and the Plan Area. Ground fish (halibut and blackcod) and the herring fisheries are important components of the Plan Area industry. The major shellfish species commercially harvested in the Plan Area are goeduck clams, dungeness crab, and shrimp.

In 1998, critically low coho stocks in the Upper Skeena and Thompson river systems threatened to shut down the Pacific salmon fishery. The federal government initiated a 3-5 year Pacific Fisheries Adjustment and Restructuring Program. Its objectives were to protect and rebuild habitat, assist the affected people, and restructure the industry. A voluntary salmon licence retirement program that concluded in March 2000 reduced capacity by at least 50% across all gear types, retiring a total of 1,406 licences coast wide (Department of Fisheries and Oceans, 2001). In addition, the program piloted selective fishing techniques and is assisting communities develop other fisheries and to diversify fishing income. Selective fishing has become the cornerstone of Pacific fishery management. The Department of Fisheries and Oceans is committed to managing the Pacific fishery generally to ensure that conservation needs are addressed and biological diversity is maintained while seeking to provide reasonable and fair fishing opportunities to all sectors (DFO, 2002).

Recent fish counts indicate that some of the coho populations of the upper Skeena River are showing clear rebuilding signs. Fishing effort will be managed at a 10% exploitation rate in 2002 (compared to an historic average rate in Canada of 40%). There is concern with in-shore rock fish and protected areas have been establish in the Plan Area.

Provided salmon stocks have at least stabilized, the industry's adjustment (both harvesting and processing capacity) is probably nearing completion. Over the longer term if salmon populations are largely restored, this would not necessarily stimulate a comparable increase in number of vessels because the capacity of the existing fleet is probably sufficient. The salmon fishery can be expected to continue facing stiff competition from farmed salmon in the market place.

Fish processing employment in 1996 was about twice that of commercial fishing (i.e. about 1,000 persons in fish processing compared to 500 in fish harvesting). Processing activity is only partially dependent on Plan Area harvest, as fish are delivered from other areas and a variety of finfish, shellfish and invertebrates are processed. While there are a number of large processing and storage plants in the Plan Area, in recent years there has been an apparent trend toward smaller specialised plants serving high valued market segments. The invertebrate processing plant in Port Edward is an example (E. Pucci & Associates, 2002). Opportunities to increase the economic contribution from further fish processing include smoking, filleting, unique packaging, custom canning, and pickling. These methods could be applied to both wild and farmed stocks.

Aquaculture Development: The North Coast has significant potential for aquaculture (shellfish and finfish) development, which at the present time is largely untapped. Presently there is one active oyster farm in the Plan Area, and interest in the culture of abalone (Kitkatla), and kelp (Metlakatla) for example. The expansion of salmon aquaculture awaits the lifting of a moratorium on approving new tenures that has been in place since 1995. A set of standards was announced by the BC government in January 2002 that will allow for the managed expansion of the salmon aquaculture industry. It is expected that the moratorium on new applications will be lifted once the waste management regulation is in place.

In anticipation of finfish applications, an aquaculture opportunity study was completed for the North Coast. The opportunity study applies technical criteria to identity areas where a proposed site would be technically acceptable.

International aquaculture companies have been in discussions with communities with respect to possible joint venture opportunities. Marine Harvest Canada (Nutreco) built in Port Edward the world's largest Atlantic salmon smolt recirculation hatchery. It is capable of producing more than 3 million smolts per year. This smolt output would require about 6 salt water farming sites for rearing. Other economic opportunities associated with fish farming are fish processing operations, feed manufacturers and box plant facilities.

Aquaculture development may offer a sustainable economic opportunity to the North Coast's remote communities, if locally supported. The North Coast's comparative advantages include protected waters, suitable water quality, and a sparsely populated region. Also, the

region's work force is skilled in fish processing and there is good transportation infrastructure. Over the longer term, if aquaculture industry expands on the BC coast, Prince Rupert could evolve as an industry supply hub, extending from Klemtu to Alaska.

Offshore Oil and Gas: Favourable geology and the common occurrence of oil and gas seeps indicate significant potential for petroleum accumulations in the Queen Charlotte Basin underlying Hecate Strait. It is estimated that the basin could contain 9.8 billion barrels of oil and 26 trillion cubic feet of natural gas (Hannigan, 1998). Compared to Northeast BC, this offshore potential is 10 times as much oil and about one-third as much gas. Exploration has been intermittent since 1913, with 8 exploration wells drilled between 1949 and 1971. The offshore area has been subject to an provincial and federal exploration moratoria since 1958 for jurisdictional as well as environmental concerns.

Recently, a scientific panel appointed by the BC government concluded[6]

> "while there are certainly gaps in knowledge and needs for intensification of research and a continuing commitment to baseline and long-term monitoring, these do not preclude a decision on the moratorium. There is no inherent or fundamental inadequacy of the science or technology, properly applied in an appropriate regulatory framework, to justify retention of the B. C. moratorium."

The panel made fifteen recommendations, several that had direct implications to the economy of North Coast, including

- design a training strategy for the wide range of job requirements and opportunities
- commence consultation at an early stage with the general public, northern coastal communities, First Nations, and others
- ensure effective participation of First Nations and northern BC coastal communities
- government to partner with industry to build upon oil and gas development as the main driver of renewed marine engineering and construction sectors.

At this time, it is uncertain if or when commercial development will proceed. If it does, there is potential for substantial economic contribution to the north coast region and the province. Over time, as the development potential of this resource becomes better defined, its implications to the LRMP (if any) should be clarified.

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[6] *No Scientific Basis for Offshore Oil and Gas Morartorium*, Ministry of Energy and Mines. News Release 002. May 1, 2002

2.3 Outlook

The future prospects of the Plan Area economy will depend in large measure on the extent it can exploit its comparative strengths, and overcome its disadvantages. A recent regional development strategy identified the following strengths and weaknesses[7].

Regional Strengths	*Regional Challenges*
• regional economic co-operation • labour force • historic background • performing arts • deep sea port • access to natural resources • energy availability • communications • major transportation hub	• high land development costs • shortage of skilled personnel • relatively high cost of living. • climate

A sub-committee of the Table participated in a one-day workshop that undertook a SWOT[8] analysis of the Plan Area and identified Opportunities and Barriers to future economic development that could be addressed by the LRMP. The findings of the workshop and additional analysis are contained in Appendix A.

Over the next 3-5 years, the following major projects and opportunities could inject activity into the Plan Area economy:

- Resumption of operations at Skeena Cellulose pulp mill: discussed in Chapter 4 (forest sector)

- Digby Island and Tsimshian access road: This $100 million dollar project would provide permanent access to the airport and the Tsimshian Peninsula. Project planning is well advanced. The tentative in-service date is 2005 (BC Major Projects Inventory). It is expected that the Alaska State ferry terminal would re-locate to Port Simpson as may ecotour operations presently based in Prince Rupert.

- Cruise ship dock: The project is multiphase, with the initial phase the construction of suitable berth on the Prince Rupert waterfront for cruise ships. With funding secured, the facility is expected to be in-place for the 2004 cruise season. The economic implications are discussed in Chapter 4 (Tourism section).

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[7] North Coast Community/Regional Development Strategy (draft 2, February 2002). Prepared by E. Pucci & Associates for the City of Prince Rupert and the Tsimshian Tribal Council.
[8] Acronym for Strengths, Weaknesses, Opportunities and Threats.

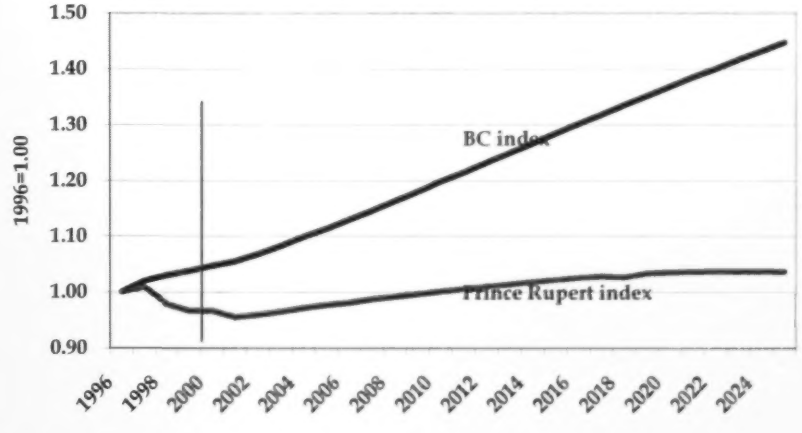
- Port of Prince Rupert is planning to convert Fairview Terminal to a container handling facility which will handle higher valued cargo.

- Iron and Steel Works is a proposed plant that would produce 1.5 million tonnes of steel slabs per year for export to Asia and US. The project is in the planning and financing stages. The plant would cost $750 million to build and create about 1000 construction jobs. Operating employment would be about 350 positions.

It is noted that over the next 5 years the North Coast Development Region (larger than the Plan Area) has slated more major projects (measured in total construction costs) than any development region outside the Mainland/Southwest region.

While it is the case that that Plan Area's key economic sectors will continue to be reliant on external markets for it future growth, a strategy for withstanding the inevitable fluctuations in the market cycle is to deliver high quality products/services at a lower cost than its competitors. The LRMP can contribute to this strategy for those activities reliant on the use of the Crown land base and resources (addressed in Chapter 4). However, for most of the major projects noted above their progress to fruition does not critically hinge on the outcome of the LRMP.

Figure 2.7 : Index of Population Growth



Source: BC Stats, PEOPLE 26

A long term perspective is also provided by the BC Stats long term population forecast prepared before the release of the 2001 Census figures. This forecast does not explicitly incorporate the population impact of discrete projects. It assumes a continuation of historic economic growth patterns, hence a continuation of historic migration trends and natural increase in the area's population. The forecast indicates slow growth, much below the provincial average. The forecast indicates that the Plan Area does not re-gain its 1996 population level until 2010. An index of population growth for the Plan Area and provincial profiles is shown in Figure 2.7. This may be a valid projection if growth in new economic opportunities is largely offset by the contraction of existing activities.

3.0 First Nations Community Profiles

3.1 Introduction

The *Current Conditions Report* (Section 2.2.2 and 2.2.5) provides historical and summary information on each of the First Nations communities located in the LRMP Plan Area.

The Plan Area's First Nations – Tsimshian Nation, Haisla Nation (Kitimaat), and Nisga'a Nation have used the Plan Area's land and coastal resources for cultural, spiritual and sustenance purposes for thousands of years.

First Nations in the Plan Area have a rich history of fish harvesting and trade, with communities moving seasonally along the banks of major rivers and channels to harvest all five species of Pacific salmon and the eulachon. Pursuit of eulachon and trade in eulachon fat established the "grease trails" trading routes between the northern villages. First Nations continue to carry on the cultural tradition of fishing, hunting, and harvesting, while participating in contemporary means of support.

3.1.1 Location and Involvement of First Nations in Relation to Plan Area Boundaries

First Nations Traditional Territories in relation to the LRMP area are shown in Map 3. The following First Nations communities that are participating in the North Coast LRMP process:

Tsimshian:	**Haisla:**	**Nisga'a Nation:**
Hartley Bay (Gitga'at)	Kitamaat	
Kitkatla (Gitxaata)		
Lax Kwala'ams		
Metlakatla		
Kitselas		
Kitsumkalum		

The Tsimshian Nation traditional territory includes two other reserve communities, which are not included in this LRMP process: Kitasoo/Xaisas and the Tsimshian community on Annette Island in Alaska.

Because the Kitsumkalum and Kitselas Band members use the land and resources of the Skeena River, of which a significant portion is in the Plan Area, these Bands are also involved in the LRMP process.

The Haisla Nation (Kitamaat) is involved in the North Coast LRMP because their traditional territory extends into the Plan Area: their territory extends into the outer central coast as far south as Graham Reach, including the northeast portion of Princess Royal Island. The primary residence of the Haisla people is currently the Kitamaat Village, located at the head of the Douglas Channel opposite the town of Kitimat. The North Coast LRMP Plan Area extends partly up Douglas Channel but does not include Princess Royal Island.

The Tsimshian and Haisla have signed framework agreements (1997 and 1996 respectively) to prepare for treaties.

3.1.2 Nisga'a Nation

The Nisga'a Nation has specific rights within the North Coast LRMP area as a result of the Nisga'a Final Agreement. The Nisga'a, since 2000, have a treaty with BC and Canada which recognizes their jurisdiction of approximately 2,000 square kilometres covering much of the Nass River watershed. The Nisga'a communities of Gingolx, Laxgalts'ap, Gitwinksihlkw and New Aiyansh are located northeast of the Plan Area boundary. Nisga'a Lands and communities are excluded from the LRMP area.

In the Plan Area, the Nisga'a Lisims government manages the following land and resources:

- Fee simple properties, many of which include mineral and gravel reserves
- Commercial recreational tenure (in numerous separate parcels)
- Other licences of occupation held in the name of Nisga'a Nation or a corporation owned by the Nisga'a Nation
- Specific zones for intertidal bivalve harvesting
- Angling guide licences for specific streams
- Registered heritage sites
- Joint management with British Columbia and Canada, of wildlife in the wildlife management area and fish in the Nass area, parts of which are in the Plan Area.

LRMP planning processes must include consideration of these Nisga'a land and resource management rights.

3.2 Demographic and Economic Characteristics - Tsimshian and Haisla Nations

The First Nations community socio-economic profiles presented here focuses on the Plan Area's performance over the past decade or so, with an outlook for the coming decade.

The following demographic and economic characteristics were identified with the Tsimshian Nation communities involved in the Plan as potentially useful:

1. Population growth by age group (on/off reserve)
2. Level of schooling (entering/graduating)
3. Unemployment rate on reserve, by sector and seasonal/permanent
4. Experienced labour force by sector (fishing, tourism, forestry, energy, mines, government and public services)
5. Family income (on reserve)
6. Dependence on safety net on reserve (employment insurance/social assistance)
7. Capital investment or economic investment on reserve (e.g. levels of funding – public vs. private)

Community health indicators were also identified as being potentially useful to characterize the First Nations socio-economic profiles. A study entitled "*Health Status and Health System Performance Report for the Northwest*" which includes the Plan Area as part of a much larger region, is due to be released by the local health unit[9]. This report covers birth rates, life expectancies, leading causes of death, children in care, educational attainment, unemployment and a host of other indicators linked to First Nations health. The LRMP table may be requested to consult this information when it becomes available.

3.2.1 Data Limitations

This report uses readily available data for First Nations communities. While Statistics Canada census data are available for 1996 and to a very limited extent for 2001, First Nations do not generally accept the accuracy of the information. Data is available from INAC, however, information in INAC reports is not always reported at a community level or distinguished between on and off reserve for each Band. Where possible, statistics developed by the Skeena Native Development Society are relied upon. The Society has been conducting population and labour market census annually from 1994 to 2000, with the next census scheduled for

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[9] James Haggerstone (pers. comm.) Aug. 26, 2002. Northern Health Authority ~ Northwest

2004. The mandate of the Society is to assist employment seekers and the employment age population, therefore, except for total population trends, all other data focuses on the labour market population. As much as possible, inferences are made from this labour market data which is the primary source of the community profile information reported here, with supplemental information used from the 1996 Statistics Canada data and reference to recent 2001 census population data. Other data sources for the community profiles include INAC publications, the BC Ministry of Education, and Prince Rupert School District #52.

Information is available, to varying degrees, for the Tsimshian and Haisla communities for the first four community characteristics listed above. Data on family income is very limited, although dependence on the safety net can be inferred somewhat from employment levels. Capital investment on reserve is not specifically reported, although housing and infrastructure assets reporting by INAC provides some information on the number of dwellings in each reserve community that are renovated or replaced. The number of dwellings are included in this report.

Community profile data for Tsimshian and Haisla communities is reported here at the aggregate Plan Area level and at the community level. Where available, comparisons are made to provincial level or Canada wide statistics. For the Nisga'a Nation, community profile data are not reported; reserves were phased out in 2000 as part of the Nisga'a Treaty, and the Nisga'a Nation representatives indicated that the community profile data would not be relevant to their participation in the LRMP process.

3.2.2 Population Characteristics – Plan Area First Nations

The total number of people in the First Nations groups involved in the LRMP was reported by the Skeena Native Development Society (2000 Labour Market Census) from membership lists from Indian and Northern Affairs Canada (on and off reserve). In 1994, the total membership[10] in the LRMP First Nations (including the Nisga'a Nation) was approximately 11,780 persons, rising to 13,360 persons in the year 2000, an increase of about 13 percent. The population change of all three groups both on and off reserve[11] and within or outside the LMRP Plan Area is shown in Figure 3.1 below.

Reserve population levels in the Pacific Northwest group of 23 communities tracked by the Skeena Native Development Society display a general trend of declining residency on reserves since 1997/98. The 11 reserve communities in or related to the LRMP Plan Area also show this peak in population growth in 1996/97 and a steep decline to 1999 by about 17 percent. The decline may also be attributed to the employment shocks discussed in Chapter 2.

Despite this decline in the 1997-1999 period, most reserve communities have had a general increase in population since 1994. Three reserve communities located directly in the coastal

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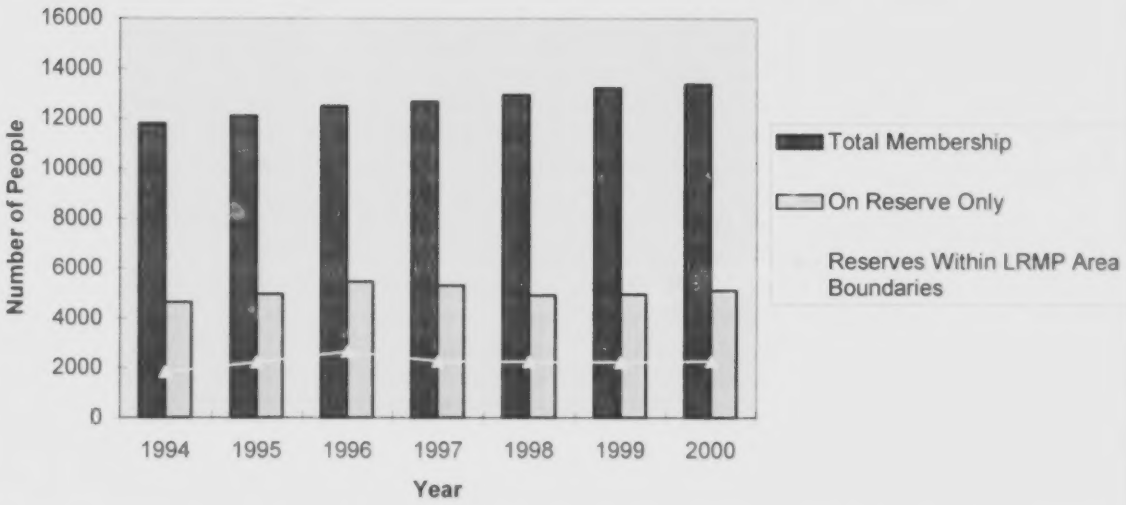
[10] Membership includes registered and non-registered First Nations.
[11] Nisga'a reserves were dissolved in 2000 when the Nisga'a Treaty came into effect. Therefore, data from 2000 for the Nisga'a Nation communities may not be reliable.

Plan Area (Hartley Bay, Kitkatla, and Lax Kw'alaams) in particular show a combined increase in population of 24 percent above 1994 levels. The year 2000 survey indicates a slight recovery in most of the reserve communities population, although it is not known whether this has been sustained.

Figure 3.1: NC LRMP First Nations Population Change 1994 - 2000

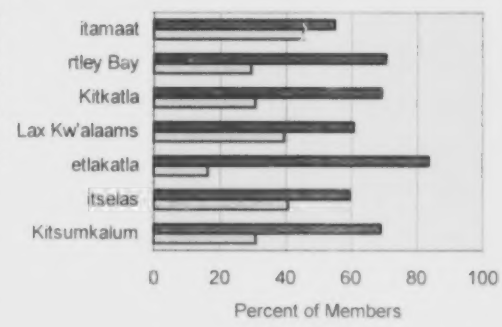


In the year 2000 most members of the LRMP area First Nations communities did not live in the reserve communities (Figure 3.2). The possible reasons for this are many including employment, being near services such as hospitals, schools or colleges, or living near family members who are located outside of the reserves. The average percentage of members living on reserve is about 35 percent. This compares to the provincial average of 52.5 percent (1998)[12]. A large number of people living off the reserve are either in the urban labour force, very young, retired, students or those that are in institutions such as long term care facilities.

Census data provides a partial view of population by age group at the time. Figure 3.3 shows available census data for the First Nations involved in the LRMP. A young population characterizes the First Nations communities. This is in keeping with the general population's

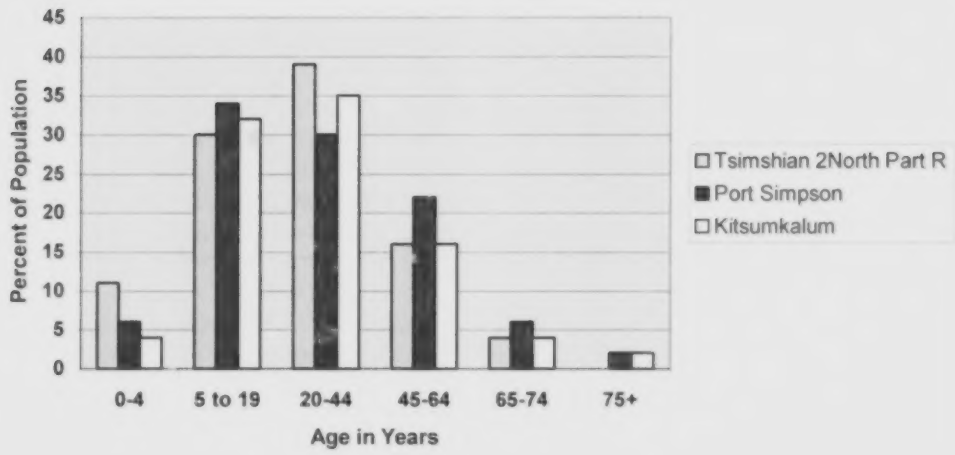
gure 3.2 First Nations Residing On or Off eserve 2000

portion of persons in
ture. Less than 6
ich is less than half
versely, 37 percent
provincial average



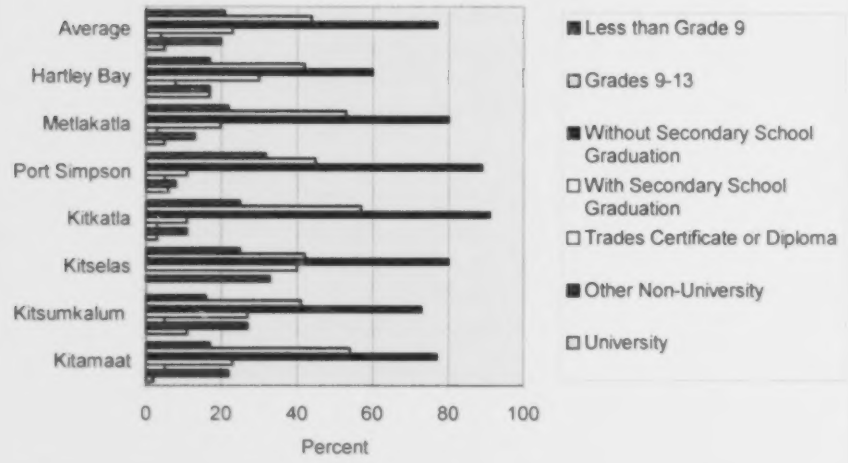
rthern Affairs 2002. First

Figure 3.3 Population by Age Group



With respect to education attainment, approximately 25 percent of the Plan Area First Nations population in 1996 had high school graduation, compared to 66 percent of the Plan Area population age 25-54 and the provincial average of 77 percent. Figure 3.4 provides average and community-level education levels in 1996.

Figure 3.4 1996 First Nations Education Levels



Data collected by the Prince Rupert School District #52 (pers. Comm. Brian Kangas) indicates that, in 2001, the level of secondary (high school) graduation for First Nations students had increased to 36 percent from 20 percent in 1996. Data for First Nations secondary school graduation for all of Canada indicates a 32 percent graduation rate in 1999-2000[13].

The post-secondary enrollment rate for all First Nations 17-34 years old in Canada averages about 6 percent in 1998-99, whereas the rate for all Canadians is approximately 11 percent. Of those First Nations who enroll in post secondary education, about 25 percent graduate.

Social Indicators: The average life expectancy for men in First Nations communities is 69.5 years compared to 76 for Canada, and for females is 77.2 years compared to 82 in Canada[14]. In the Plan Area, life expectancy is 76.5 years, compared to the First Nations (BC) average of 73.4 and the provincial average of 79 years. In First Nations communities, home ownership in 1996 was more common than renting, by an average of about 75 percent which is comparable to the provincial average.

Income and Dependence on the Safety Net: In 1995, the average family income in the First Nations communities was $33,000 compared to the Plan Area average of $57,663. The average income in the City of Prince Rupert was $59,358. The lack of relatively high paying resource industry jobs in the reserve communities compared to centres such as Prince Rupert account for this.

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[13] Source: Basic Departmental Data 2001. Department of Indian and Northern Affairs. Ottawa.
[14] Source: Registered Indian Population by Sex and Residence 2001. Department of Indian and Northern Affairs 2002. First Nations and Northern Statistics Section, Ottawa.

3.3 First Nations Community Profiles

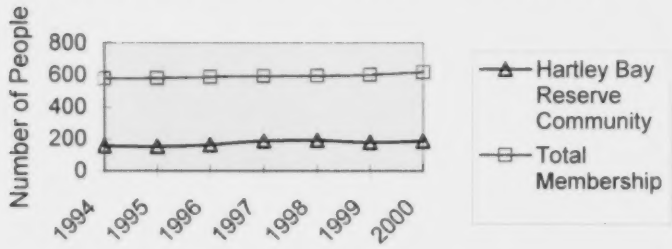
3.3.1 Hartley Bay

The village of Hartley Bay is located at the confluence of Douglas and Laxgalts'ap Channels, approximately 140 km south of Prince Rupert. The Hartley Bay Band Council administers 14 reserves covering 520 hectares. The community is accessible by boat or floatplane. Harbour Air Ltd offers one scheduled flight per day from Prince Rupert, and the Harbour Mist I is a marine transport to Prince Rupert offering service several times per month.

The total population of Hartley Bay reserve community (see Figure 3.5) has risen by approximately 18 percent since 1994, increasing from 157 people in 1994 to 186 people in the year 2000[15]. This is more than double the increase in population for the overall membership in the Band, which experienced a 7 percent increase in population over that time period.

About 30 percent, or 186 people who count themselves as Band members, live on the reserve out of a total membership of 619. Another 23 percent, or 140 people who are between 15 to 65 years old, lived in Prince Rupert in the year 2000. The remainder either live in other communities, in institutions (e.g. long term care), or are under the ages of 15 or over 65.

Figure 3.5: Population 1994-2000 Hartley Bay



The Hartley Bay population has only 3.2 percent of its population over the age of 65, less than a quarter of the average in BC of 12.8 percent. Over 29 percent of the Hartley Bay population is under 14 years of age, while the BC average for this group is less than 20 percent.[16]

The level of schooling for Hartley Bay provided by Census statistics for 1996 was as follows:

Total Population 15 Years and Older by Level of Schooling (1996)

[15] As reported by the Skeena Native Development Society. Statistics Canada census data for 1996 and 2001 indicates a population change from 155 persons in 1996 to 162 persons in 2001.

[16] Source: Forest & Fisheries Tourism Opportunities Study for the North Coast Forest District. Project Report. March 2000

Schooling Level	**Percent (1996)**
University	17
Other Non-University	17
Trades Certificate or Diploma	8
With Secondary School Graduation	30
Without Secondary School Graduation	60
Grades 9-13	42
Less than Grade 9	17

Recent data from the Prince Rupert School District #52 indicates that the percentage of First Nations students graduating from high school in 2001 is 36 percent.

Labour Force: The labour force population in Hartley Bay is estimated in 2000 as 94 persons, slightly lower than the peak in 1997 of 98 persons. In 1996, unemployment was at 63 percent compared to 49 percent in 2000, a large drop in unemployment since 1999. The percentage of the unemployed population that was seeking work in 2000 was 38 percent, which is improved since 1998 when the unemployed who were seeking work was at 44 percent after the decline in the fishery.

In 1996, 33 percent of the Hartley Bay employed labour force was involved in government services, while fishing made up 17 percent. Construction and educational services also had 17 percent shares of the working labour force.[2] In the year 2000, the government services (including education) employed 84 percent of those working, while fishing dropped to about 9 percent. Forestry only employed about 2 percent of the labour force and other employment included 5 percent of the labour pool.

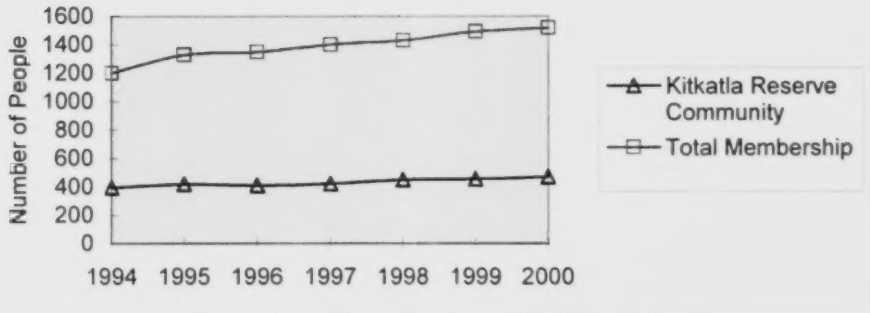
3.3.2 Kitkatla

Kitkatla village is located about 60 kilometers southwest of Prince Rupert on Dolphin Island. The Kitkatla Band Council administers 21 reserves covering 1,885 hectares. The site of the village is one of the oldest continuously inhabited sites on the coast. The village is accessible on several scheduled flights per day by Inland Air floatplane.

The total population of Kitkatla reserve community (see Figure 3.6) has risen by approximately 19 percent since 1994, increasing from 393 people in 1994 to 469 people in the year 2000[17]. This is somewhat lower than the increase in population for the overall membership in the Band, which experienced a 26 percent increase in population over that time period.

About 30 percent, or 469 people who count themselves as Band members, live on the reserve out of a total membership of 1517. Another 16 percent, or 246 people who are between 15 to 65 years old, lived in Prince Rupert in the year 2000. The remainder either live in other communities, are living in institutions (e.g. long term care) or are under the ages of 15 or over 65. Figure 3.6 indicates the population changes as reported by the Skeena Native Development Society.

Figure 3.6: Kitkatla Population Change 1994 - 2000



The Kitkatla population has only 3.2 percent of its population over the age of 65, less than a quarter of the average in BC of 12.8 percent. Over 29 percent of the Kitkatla population is under 14 years of age, while the BC average for this group is less than 20 percent.[18]

The level of schooling for Kitkatla provided by Census statistics for 1996 was as follows:

Total Population 15 Years and Older by Level of Schooling (1996)

Kitkatla	Percent (1996)

[17] As reported by the Skeena Native Development Society. Statistics Canada census data for 1996 and 2001 indicates a population change from 45 persons in 1996 to 50 persons in 2001, an increase in 11%.

[18] Source: Forest & Fisheries Tourism Opportunities Study for the North Coast Forest District. Project Report. March 2000

University	3
Other Non-University	11
Trades Certificate or Diploma	3
With Secondary School Graduation	11
Without Secondary School Graduation	91
Grades 9-13	57
Less than Grade 9	25

Recent data from the Prince Rupert School District #52 indicates that the percentage of First Nations students graduating from high school in 2001 is 36 percent.

Labour Force: The labour force population in Kitkatla is estimated in 2000 as 227 persons, slightly lower than the peak in 1998 of 262 persons. Total unemployment in Kitkatla in 2000 was 78 percent compared to approximately the same percentage in 1996. The percentage of unemployed people seeking work in 2000 was 52 percent, which has increased dramatically from 1994 when those seeking work was about 16 percent but has dropped since 1999 when the rate was 58 percent.

In 1996, 42 percent of the Kitkatla employed population was involved in government services, education services made up 11 percent, while fishing made up 19 percent. Construction and manufacturing also employed 19 percent of employed persons.[2] In the year 2000, the public sector employed 46 percent of the working labour force (which includes educational services), while fishing employed about 38 percent. Foresty employed about 7 percent of the labour force and other employment included 7 percent of the labour pool. A small percentage of employment is in tourism (1 percent).

The Band reports that employment in commercial fishing, construction, artistry and bed and breakfast operations tends to be seasonal and part-time. Full time employment is provided by and administration positions, nurses, sea-plane support staff positions, and the community school[19].

3.3.3 Lax Kw'alaams

The Lax Kw'alaams traditional territory consists of 72 reserves on 1050 ha located at the north end of the Tsimpsean Peninsula at the entrance to Portland inlet, 55 km north of Prince

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[19] Pers. Comm. Bruce Watkinson, Kitkatla Band

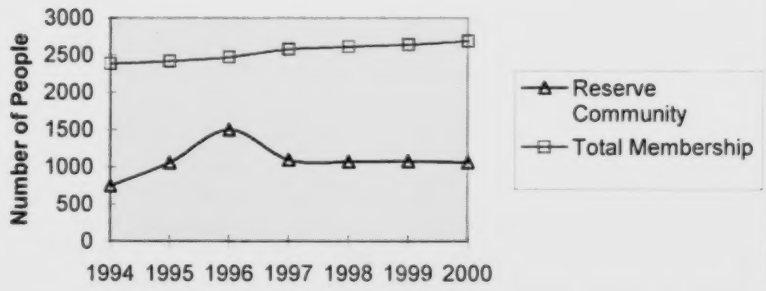
Rupert. Port Simpson is the primary residence of the Lax Kw'alaams, located at the site of a Hudson's Bay fort established in 1834 where trade with the nine Tsimshian tribes flourished.

The total population of Lax Kw'alaams reserve community has risen by approximately 43 percent since 1994, increasing from 744 people in 1994 to 1061 people in the year 2000. However, the population appears to have dropped significantly since 1996 when the reserve community population was reported at 1500. This level of population is not consistent with that reported in 1995 (1060) or 1997 (1096). Statistics Canada census data for 1996 and 2001 indicates a population change from 1019 persons in 1996 to 785 persons in 2001, a drop of 23 percent.

The population for the overall membership in the Band has increased by 13 percent since 1994.

About 40 percent, or 1061 people who count themselves as Band members, live on the reserve out of a total membership of 2688. About 13 percent of membership, or 351 people who are between 15 to 65 years old, lived in Prince Rupert or Terrace in the year 2000. Figure 3.7 indicates the population changes as reported by the Skeena Native Development Society.

Figure 3.7: Lax Kw'alaams Population Change



The Lax Kw'alaams population in 1996 had about 9 percent of its population over the age of 65, or about two thirds of the average in BC of 12.8 percent. Over 30 percent of the Lax Kw'alaams population was under 14 years of age in 1996, well above the BC average for this group at about 20 percent. It is reported that in 1999, 56 percent of the population is less than 24 years old compared to the BC average for this age group of only 33 percent.[20]

The level of schooling for Lax Kw'alaams provided by Census statistics for 1996 was as follows:

Total Population 15 Years and Older by Level of Schooling (1996)

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[20] North Coast Forest District FF Tourism Opportunities Study – Project Report 2000

Lax Kw'alaams	Percent (1996)
University	6
Other Non-University	8
Trades Certificate or Diploma	5
With Secondary School Graduation	11
Without Secondary School Graduation	89
Grades 9-13	45
Less than Grade 9	32

Recent data from the Prince Rupert School District #52 indicates that the percentage of First Nations students graduating from high school in 2001 is 36 percent.

Family income for Lax Kw'alaams is an average of $35,000 in 1995[21] compared to the provincial average of $50,700. In 1995, the average family income in the First Nations communities was $33,000 compared to the Plan Area average of $57,663.

Labour Force: The labour force population in Lax Kw'alaams is estimated in 2000 as 475 persons, lower than the peak in 1997 of 574 persons. Total unemployment in 2000 was 83 percent compared to 81 percent in 1996. The percentage of labour force population unemployed and seeking work in 2000 was 43 percent, which has decreased dramatically from 1998 when those seeking work jumped to 76 percent (from 33 percent a year earlier).

In 1996, 88 percent of the labour force in Lax Kw'alaams worked part year or part time compared to the provincial average of 51 percent; while only 10 percent worked full time for the full year compared to the provincial average of 46 percent. This reflects the seasonal nature of available work in the area.

The 1996 Census indicates that over 25 percent of the Lax Kw'alaams employed labour force was involved in manufacturing in 1996, 18 percent in government services, logging and forestry made up 10 percent, while fishing and trapping made up 20 percent. In the year 2000, the public sector employed 32 percent of the working labour force (which includes educational services), while fishing employment was reported at 61 percent – an increase of over 20 percent from the year previous. Employment in "other" industries included 6 percent

[21] 1996 Census Data

of the labour pool while forestry, mining and tourism employment were reported at zero percent.

3.3.4 Metlakatla

The Metlakatla traditional territory consists of 16 reserves on 162 ha. The community of Metlakatla is located 5 km northwest of Prince Rupert on the Tsimshian Peninsula across from Digby Island. Metlakatla is considered to be one of the oldest continually inhabited regions of the world - two ancient Tsimshian village sites occupied more than 18 to 20 centuries ago are located on Pike Island, one and a half kilometres from Metlakatla.

The total population of Metlakatla reserve community has fallen by approximately 8 percent since 1994, decreasing from 122 people in 1994 to 112 people in the year 2000[22]. Overall Band membership experienced a 20 percent increase in population over that time period.

About 17 percent, or 112 people who count themselves as Band members, live on the reserve out of a total membership of 674. About 24 percent of membership, or 160 people who are between 15 to 65 years old, lived in Prince Rupert, Terrace or Kitimat in the year 2000.

Figure 3.8: Metlakatla Population Change 1994-2000

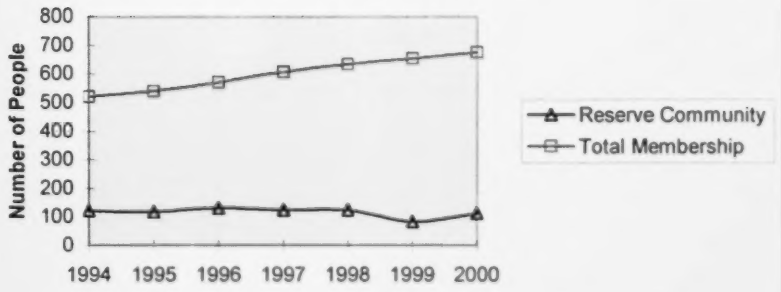


Figure 8 indicates the population changes as reported by the Skeena Native Development Society.

The level of schooling for Metlakatla provided by Census statistics for 1996 was as follows:

Total Population 15 Years and Older by Level of Schooling (1996)

[22] As reported by the Skeena Native Development Society. Statistics Canada census data for 1996 and 2001 indicates a population change from 113 persons in 1996 to 91 persons in 2001, a drop of 19.5%.

Metlakatla	Percent (1996)
University	5
Other Non-University	13
Trades Certificate or Diploma	3
With Secondary School Graduation	20
Without Secondary School Graduation	80
Grades 9-13	53
Less than Grade 9	22

Recent data (2001) from the nearby Prince Rupert School District #52 indicates that the percentage of First Nations students graduating from high school is 36 percent.

Labour Force: The labour force population in Metlakatla is estimated in 2000 as 65 persons, down from a peak in 1997 and 1995 of 75 persons. Total unemployment in 2000 was 60 percent compared to 63 percent in 1996. The percentage of labour force population unemployed and seeking work in 2000 was 18 percent, which has decreased dramatically from a year earlier when labour force members seeking work was reported at 40 percent.

Data for the 1996 year for labour involvement for Metlakatla is not available. In the year 2000, the public sector employed 73 percent of the employed labour force, (which includes educational services), while fishing employment was reported at 17 percent, a decrease from a year earlier when fishing employed 32 percent of the employed labour force. Forestry and other employment included 5 percent each of the employed labour pool while mining and tourism employment were reported at zero percent.

3.3.5 Kitselas

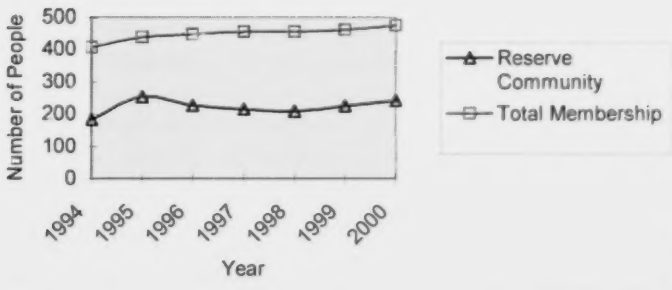
The Kitselas territory consists of eight Reserves totalling 1067 ha in the general area of Terrace in the vicinity of the junction between highway 16 and 37, four of which are occupied. The traditional area covers approximately 6500 square kilometres in the general areas of the Zymoetz, Kitnayakwa and Gitnadoix rivers and Lorne Creek in the north, and the Kitimat River headwaters in the south. The occupied reserves include IR1 (Gitaus), IR 4 (Endudoon), IR 5 (Zimoetz) and IR6 (Kulspai) comprising approximately 55 dwellings of

Kitselas families. [23] The Kitselas historical remnants in Kitselas Canyon have been carbon-dated at approximately 5000 or more years of age, indicating occupancy for at least that long.

The total population of Kitselas on- reserve community in 2000 was 242 and off-reserve was 233. The population has risen by almost 32 percent since 1994, increasing from 184 people in 1994 to 242 people in the year 2000[24]. This is somewhat lower than the increase in population for the overall membership in the Band, which experienced a 16 percent increase in population over that time period.

About 50 percent, or 242 people who count themselves as Band members, live on the reserve out of a total membership of 475. The majority of people living off reserve are located in the Terrace area. Figure 3.9 indicates the population changes as reported by the Skeena Native Development Society.

Figure 3. 9: Kitselas Population Change 1994-2000



The level of schooling for Kitselas provided by Census statistics for 1996 was as follows:

[23] Source: Kitselas Capacity Initiative Project – 1999/2000. End Report of the Kitselas Bio-Regional Land and Resource Project June 2000.

[24] Statistics Canada Census shows a population of 1 in 1996 and 58 persons in 2001.

Total Population 15 Years and Older by Level of Schooling (1996[25])

	Percent (1996)
University	0
Other Non-University	33
Trades Certificate or Diploma	0
With Secondary School Graduation	40
Without Secondary School Graduation	80
Grades 9-13	42
Less than Grade 9	25

Labour Force: The labour force population in Kitselas is estimated in 2000 as 87 persons, significantly lower than the peak in 1996 of 123 persons. Total unemployment in 2000 was 59 percent compared to 60 percent in 1996. The percentage of people in the labour force who were seeking work in 2000 was 25 percent, which has improved from previous years when those seeking work was as high as 41 percent (1997) but has increased since 1998 when the unemployed and seeking rate was reported at 14 percent.

In the year 2000, the public sector employed 63 percent of the employed labour force (which includes educational services) which is up from the 47 percent a year earlier, while fishing employed about 2 percent. Forestry employed about 15 percent of the labour force and other employment included 20 percent of the employed labour pool. No employment was reported in either the tourism and mining industries in 2000 and 1999.

3.3.6 Kitsumkalum

The Kitsumkalum traditional territory consists of four reserves on 592 ha; Kitusmkalum IR 1 is at the junction of the Kitsumkalum and Skeena Rivers, further up the Kitsumkalum river is Dalk-ka-gila-quoex IR 2, Zimacord IR3 on the Skeena River and Port Essington IR 4 on the Skeena River.

The total population of Kitsumkalum reserve community decreased by approximately 7 percent since 1994, from 224 people in 1994 to 209 people in the year 2000[26]. During this period, the overall membership in the Band increased by 7 percent.

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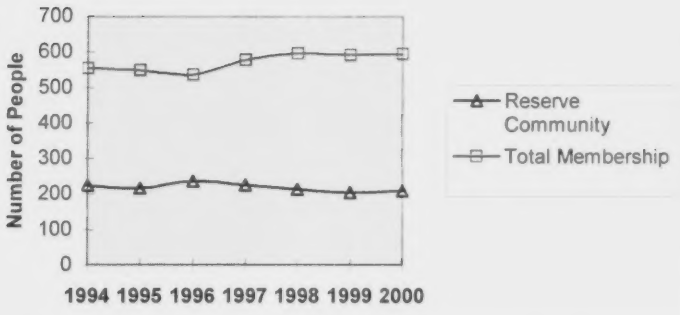
[25] Statistics Canada First Nation Profiles 1996 Census

About 35 percent, or 209 people who count themselves as Band members, live on the reserve out of a total membership of 594. About 20 percent of membership, or 121 people who are between 15 to 65 years old, lived in Prince Rupert, Terrace or Houston in the year 2000. The remainder either live in other communities, are living in institutions (e.g. long term care) or are under the ages of 15 or over 65. Figure 3.10 indicates the population changes as reported by the Skeena Native Development Society.

Figure 3.10: Kitsumkalum Population Change 1994-2000



Statistics Canada 1996 Census data indicates that the Kitsumkalum population in 1996 had only 6 percent percent of its population over the age of 65, less than half of the average in BC of 12.8 percent. About 33 percent of the Kitsumkalum population was under 19 years of age in 1996, well above the BC average for this group at about 26 percent.

The level of schooling for Kitsumkalum provided by Census statistics for 1996 was as follows:

[26] Statistics Canada Census data shows an increase of 6.9% (although this may include non-native residents), from 248 persons in 1996 to 265 persons in 2001.

Total Population 15 Years and Older by Level of Schooling (1996)

Kitsumkalum	Percent (1996)
University	11
Other Non-University	27
Trades Certificate or Diploma	5
With Secondary School Graduation	27
Without Secondary School Graduation	73
Grades 9-13	41
Less than Grade 9	16

Labour Force: The labour force population in Kitsumkalum is estimated in 2000 as 227 persons, slightly lower than the peak in 1998 of 262 persons. Total unemployment in 2000 was 46 percent compared to 61 percent in 1996. The percentage of labour force population unemployed and seeking work in 2000 was 17 percent, from a high in 1998 of 27 percent.

In 1996, 25 percent of the Kitsumkalum employed labour force was involved in government services, logging and forestry made up 17 percent, while fishing and trapping made up 17 percent of the local labour force. In the year 2000, the public sector employed 63 percent of those that were employed (which includes educational services), while fishing employed about 11 percent. Forestry employed about 12 percent of the working labour force and other employment included 14 percent of the labour pool. A small percentage of employment is in mining (1 percent).

3.3.7 Haisla (Kitamaat)

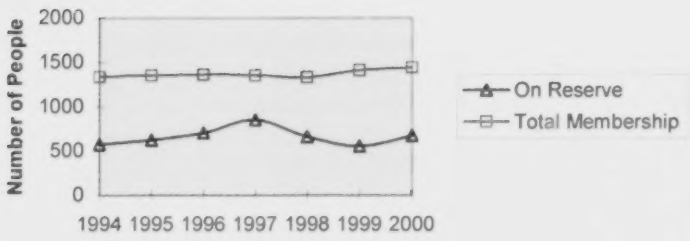
The Kitamaat traditional territory consists of 19 reserves on 783.5 ha. The primary residence of the Haisla people is currently the Kitamaat Village, located at the head of the Douglas Channel opposite the town of Kitimat.

The total population of Kitamaat reserve community has increased by approximately 17 percent since 1994, from 573 people in 1994 to 672 people in the year 2000[27]. However, there has been a small decline in population since 1996 (about 4 percent). Overall Band

[27] Statistics Canada Census data shows a population on reserve in 1996 of 558 persons and in 2001 of 511 persons, a decrease of 8.4%. During this same period, the Skeena Native Development Society shows a 4% decrease in population on the reserve

membership experienced an 8 percent increase in population over that time period, from 1335 to 1441 persons.

Figure 3.11: Haisla Population Change 1994-2000



About 47 percent, or 672 people who count themselves as Band members, live on the reserve out of a total membership of 1441. About 20 percent of membership, or 284 people who are between 15 to 65 years old, lived in Prince Rupert, Terrace or Kitimat in the year 2000. The remainder either live in other communities, are living in institutions (e.g. long term care) or are under the ages of 15 or over 65. Figure 3.11 indicates the population changes as reported by the Skeena Native Development Society.

The level of schooling for Kitamaat provided by Census statistics for 1996 was as follows:

Total Population 15 Years and Older by Level of Schooling (1996)

Kitamaat	Percent (1996)
University	2
Other Non-University	22
Trades Certificate or Diploma	5
With Secondary School Graduation	23
Without Secondary School Graduation	77
Grades 9-13	54
Less than Grade 9	17

Labour Force: The labour force population in Kitamaat is estimated in 2000 as 326 persons, down slightly from a peak in 1997 of 344 persons. Total unemployment in 2000 was 60 percent compared to 62 percent in 1996. The percentage of labour force population

unemployed and seeking work in 2000 was 28 percent, which has increased significantly *from a year earlier* when this category was reported at 11 percent.

Data for the 1996 year for labour involvement in sectors for the Kitamaat reserve is not available. In the year 2000, the public sector employed 48 percent of the working labour force (which includes educational services), while fishing employment was reported at 6 percent, a slight increase from a year earlier when fishing employed 5 percent of the working labour force. Forestry employed 6 percent of the labour pool while 'other' employment included 39 percent of the labour force, likely in manufacturing in the town of Kitimat.

3.4 Outlook for First Nations Economic Development

The future prospects of the First Nations communities associated with the Plan Area will depend to a large degree on the development of strengths and addressing challenges, some of which are dependent on the regional and, to an extent, the world economy. The following key points on strengths and challenges were identified in a workshop with Tsimshian representatives on February 28, 2002 and in discussions with individuals in several of the First Nations communities:

Strengths: Knowledge and proximity to land and water resources, increasing ability to participate in and direct economic development, growing labour force, commitment to improvements in educating the workforce, commitment to continual improvement of economic conditions, participation in developing partnerships to assist with reducing economic dependencies, First Nations products and sites with unique marketing potential.

Challenges: Educational system to address the needs of First Nations, physical isolation of communities, inexperience with business partnerships and development, overlapping territorial claims and economic development plans among First Nations communities, climate (for tourism), uncertain relationship with government and industry.

Over the next 3-5 years, the following major projects and opportunities are being pursued to enhance First Nations economic opportunities:

- Investigation of opportunities and partnerships for aquaculture development – both finfish and shellfish
- Fish/shellfish processing and related distribution
- Improvements in access: Digby Island and Tsimshian access road: possible Alaska ferry terminal, Nisga'a Highway improvements, marina upgrades and expansions
- First Nations branded produce – processed products such as smoked salmon and fish oils, artisan products

- Cultural sites – historic or cultural site development and tours
- Cultural products – cedar weaving, wood carving, jewelry and clothing design
- Forestry – harvesting, reforestation, rehabilitation, value-added product development
- Mining – gravel exports, mineral developments
- Investigation and development of green energy projects (run-of-river, wind)
- Participation in investigation of offshore resources
- Training and agreements for jobs in manufacturing or port facilities
- Ecotourism – developing and managing forest recreation sites, hotsprings, trails, fish and wildlife lodges and tours, kayaking and boat tours

In addition, the Economic Measures Coordinator for the region has recorded a number of economic development plans and objectives for the Band which are being reported separately.

Each of these possibilities involve opportunities for jobs, training, marketing, and spin-off development opportunities.

3.5 Land Use Planning Indicators

The LRMP process can assist in the protection or special management of key areas of economic and cultural interest to First Nations in the Plan Area. Many of the Plan Area's First Nations have developed their own land use plans which identify specific areas of interest, including:

- Heritage sites (burial sites, fish weirs, habitations, middens, petroglyphs)
- Hunting areas
- Food gathering areas
- Medicinal plant areas
- Cultural and spiritual areas
- Migration camps (food gathering)
- Special management areas

Other types of indicators that are potentially useful in the LRMP process include identification of key species or classes of plants and animals that are important to protect or manage for First Nations uses or for their economic development plans.

4.0 Overview of Economic Sectors Closely linked to Crown land base

4.1 Introduction

The Plan Area's more economically significant "basic" industries were identified in Chapter 2. The leading sectors were tourism, fishing and fish processing, logging and wood processing, and the public sector. This chapter focuses on those important, or potentially important basic industries that substantially rely on the Crown land base and/or Crown resources to support their respective economic activity. This reliance makes them sensitive to the Crown land management strategy formulated by the Table. Hence Table members should have a better understanding of the factors that are shaping these basic industries, recent performance, and their respective outlook given current management conditions.

The three basic industries examined in this chapter are tourism/recreation, timber, and mining. While the latter industry does not presently have a significant presence in the Plan Area, it has historically, and there is the potential it may again. The agriculture industry is also closely linked to the Crown land base, but its potential in the Plan Area is limited and there are few person engaged in the activity. For these reasons it was not examined further. The order of the sectors is based on their relative contribution to the Plan Area economy at the end of 2001, as presented in chapter 2.

The information presented here is intended to provide an overview of the sector. Generally, a relatively high level perspective is maintained in keeping with the strategic level of the land planning process. Company specific and site specific information, where presented , is intended to illustrate a general point. The Table may wish to obtain greater industry detail on specific matters from presentations by the sector representative at the Table.

4.2 Tourism and Recreation Sectors

Recreation and Tourism are addressed together because their "interests" with respect to the Crown land base and resources are similar. Tourism, in this context, is any outdoor or leisure activity in which a fee for service relationship exists[28]. Recreation consists of any outdoor or leisure activity where the participant does not pay a commercial operator for the privilege of partaking in the activity. Hence activities such as wildlife viewing, backcountry hiking, fishing, etc. may be recreation where it is conducted privately, or tourism if a fee is paid to a commercial operator. However, beyond the common resource base, the needs and

[28] Definition from *Recreation Resource Analysis Report*. Our consideration of the tourism industry adopts a broader definition of a tourist to be a visitor to the Plan Area independent of the trip purpose.

requirements of public recreation and the tourism operator are different. For the recreationalist, the activity is discretionary and not central to the individual's financial well-being. For the tourism operator, the status and access to the Crown resource may be fundamental to the financial viability of the operation.

Up to date an accurate information on public recreation and tourism uses of Crown resources is scarce and incomplete. Information has been compiled from several sources to provide a reasonably current view, including data provided by Table sector representatives. The following two sections provides a profile of the Plan Area's tourism and recreation sectors respectfully.

4.2.1 Tourism

According to the updated estimates of economic dependency, tourism was the Plan Area's second largest industrial sector ranked by numbers employed, consisting of some 1,400 persons at the end of 2001. This direct employment supports additional "dependent" employment of some local 240 jobs. It attained this relative rank principally by maintaining its level of economic activity while the traditional leading industries (i.e. fishing and forest industry) were severely impacted by external events. Indeed, anecdotal information indicated that a number of persons losing employment in the traditional industries took up at least part-time employment in the tourism sector. For community stability, in both economic and social terms, Prince Rupert is fortunate such an opportunity is available.

Visitor Characteristics: Prince Rupert is the hub for most visitors to the Plan Area, arriving by highway (private auto and bus), ferry, private boat, rail, and air. The total number of visitors is estimate to be in the order of 400,000 to 500,000 per year, but it is difficult to remove double counting that is present in the data. According to respondents to Tourism Prince Rupert survey, 60% of the respondents travelling to Prince Rupert arrived by road (Tourism Prince Rupert, 1996). About 16% arrived by ferry and 5% of the respondents arrived by air.

The trend in BC Ferries passenger traffic is summarised in **Figure 4.1**. The ferry traffic reported by BC Ferries is highly seasonal and there is considerable fluctuation in annual ridership, from highs of nearly 80,000 passengers to lows of 60,000. Alaska ferry annual traffic has averaged about 50% of BC Ferries annual volume in recent years. In a typical year, about 40% (i.e. 28,000) of passengers arrive/depart on BC Ferries route Prince Rupert/Port Hardy in the two peak summer months of July and August. The trend in summer travel is also plotted in **Figure 4.1**[29]. The trend lines fitted to both annual and summer passenger numbers show a slightly declining trend over the twenty year period. A similar trend is evident in summer highway traffic also [30]. That is, traffic counts at locations close to Prince Rupert indicates that tourism traffic significantly boosts summer traffic volumes, but

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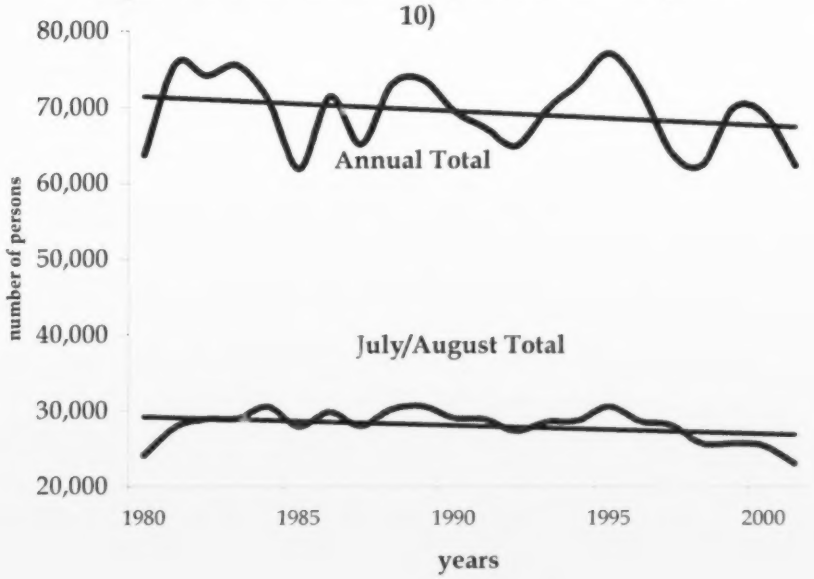
[29] Corresponding data for the Alaska ferry was not available at the time of writing.

[30] Table 5.3-1 (Clover Point, 2000) indicates a declining trend in summer average daily traffic at three traffic count locations near Prince Rupert.

growth in the summer peak through the 90's has been flat, to declining. The Alaska Ferry blockade in 1997 is identified as an event that negatively impacted tourism, but the reasons for the seemingly longer term declining trend is less clear. Particularly where there is other anecdotal evidence indicating relatively robust growth in other marine tourism industries (i.e. pocket cruise ship, Vancouver based cruise ships).

Figure 4.1 Trend in Ridership on BC Ferrries (Route 10)



Source: BC Ferries

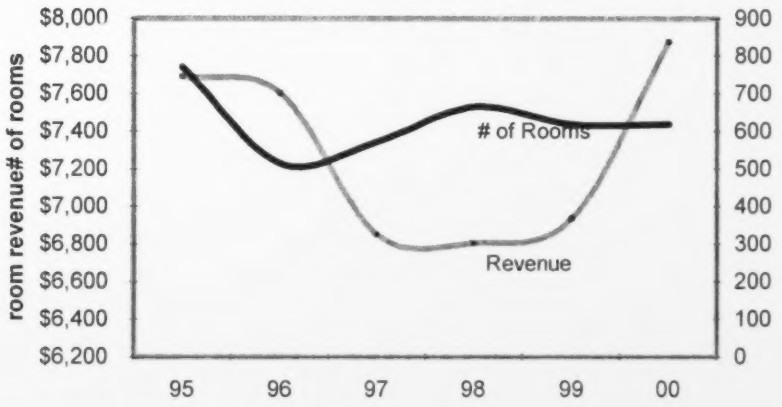
According to the 1996 Survey [31](Tourism Prince Rupert), about a quarter of the visitors to the Info Center are BC residents. Visitors from the rest of Canada makes up another quarter. About half of the respondents to the questionnaire were from the US. European visitors make up about 8%. Most of the parties are 2-3 persons, generally older (i.e. over 50), with above average income, stay 1-2 nights, visiting Prince Rupert for the first time, and spending about $130 per day. The primary purpose of the visit is sightseeing. For many visitors, the stay in Prince Rupert is part of a much longer vacation, ranging from 2 weeks to 3 months. However, over the past decade it is indicated that Prince Rupert has been successful at retaining the transient visitors longer. (pers. comm Tourism Prince Rupert). This is attributed to better product development and advertising. In particular charter fishing, whale

[31] The findings are from persons visiting the Info Centre and completing the survey. It is not a random sample and does not provide a statitistically valid profile of total visitors, but it does provide useful information about those completing the survey.

and bear watching, high quality museums and the development of Pike Island are enticing visitors to spend greater time in the Plan Area.

An indicator of visitor activity is provided by room accommodation statistics (**Figure 4.2).** Gross room revenue was nearly $8 million in 2000, a substantial increase over the two preceding years. The dip in revenue may be attributed to a slowdown in industrial activity (the data includes spending by business travellers) as well as the effect of the harbour blockade in 1997.

Figure 4.2: Prince Rupert Accomodation Indicators



The number of Small Ship (Pocket) Cruise Ship calling into P rince Rupert traffic has grown from 1 in 1997 to 20 in 2001. Thirty seven visits are expected in 2002. The visit may be a port of call, or in most cases a passenger exchange. The latter in particular provides an opportunity for pre and post cruise tours in the Plan Area. This growth has been stimulated by the Prince Rupert Port Authority's construction of marine facilities in 1998. The ships range in size, carrying between 15 to 115 passengers. The total number of passengers arriving or departing on the pocket cruisers for the 2002 season is expected to be about 1,800.

Large cruise ships on the Alaska cruise route have made infrequent stops in Prince Rupert. For instance, the Norwegian Wind carrying some 1,800 passengers made a test call in 1998. In 2001 there were 24 cruise ships transiting the Inside Passage carrying some 700,000 passengers to Alaska during a five month season (May to October). However, the lack of suitable berthing facilities has hindered the Prince Rupert's ability to induce cruise lines to make a port call. Hence there is presently no direct economic contribution to the Plan Area economy. This is expected to change with the completion of the Northlands Terminal Cruise Ship berth expected for the 2004 season. Four cruise lines have committed to visit the Port in 2003, making 39 port calls and bringing some 54,000 visitors to the area. Ten years from completion of the berth (i.e. Phase 1 of the Northlands redevelopment) the Port forecasts there could be as many as 140 ship visits per season bringing some 250,000 passengers to the

port. Passenger spending would stimulate growth in local businesses leading to new seasonal and full time employment in new and/or expanded businesses. Assuming average spending of $65 per day per passenger , an additional $3.5 million could be injected into the local economy in 2003. In year 10, this could increase to $16 million.

With respect to wildlife viewing, Khutzeymateen Grizzly Bear Sanctuary Park is recognised for grizzly bear viewing. *There are two operators licensed to guide* visitors within the park. There are also non-guided visitors to the Park, as well as viewing activities in Khutzeymateen Inlet outside of the park. The viewing activity occurs primarily in May/June period of the year. A recent estimate of the total number of persons visiting the area in a season for bear viewing is some 1,750 persons[32] .

Operators and "Products": A survey of operators identified some 140 operations offering a diverse mix "products" to the visitors (Clover Point, 2000). The results of the survey are:

Inventory of Commercial Tourism Operations

	Number of Operators		
Marine, salt water (65 in total)	**primary**	**secondary**	
Fishing	50	5	
Sailing	4	1	
Sea Kayaking	1	4	
Boating (motorized)	5	26	
Culture/Heritage	1	2	
Large land	2	6	
Large Marine	2	36	
Scuba diving		18	
Marine Charters, fresh	3	**Attractions**	
Air Tours	5	Museums	2
Kyak/canoe	7	Arts/Heritage	6
Bus Tours	4	Golf	1
Hiking/Mountaineering	2	Marinas	7
Scuba/snorkling	4		
Other	3		

Source: Forest & Fisheries Tourism Opportunities Study for the North Coast Forest District

Most of the operators are offering "products" that are marine based. Of the 93 operations identified in the survey, at least 79 are marine based and most of these are salt water marine. There is a concentration of operations in Prince Rupert, and there are operations established

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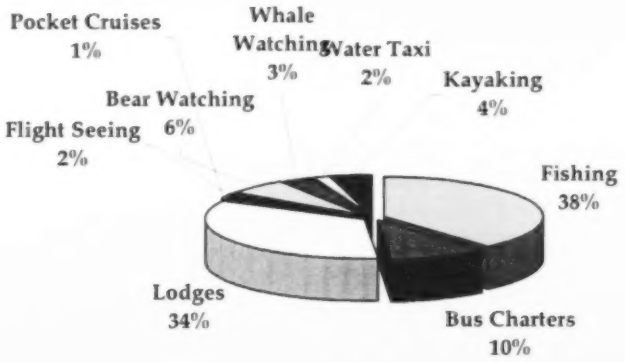
[32] Geoscape Environmental Planners and Clover Point Cartographics Ltd. "*North Coast Tourism Opportunity Study: Suitability Mapping and Tourism Use Mapping*", page 20.

or planned in a number of the smaller communities (i.e. Melalatla, Port Edward, Hartley Bay, Oona River, Kitkatla, and Lax Kw'alaams) as well as floating lodges. The locations of the existing operations are indicated on the Map 3. Salt water fishing is by far the largest segment of the industry, while participation in sea kayaking and wildlife viewing is reported to have grown significantly over the past decade.

Figure 4.3: Distribution of Gross Sales by Tourism Activity (total sales $6 million)

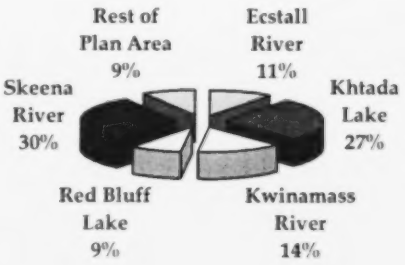


A perspective on the size and relative structure of the sector is obtained from the distribution of gross sales. Information from an informal survey conducted for this report is shown in **Figure 4.3.**

The findings indicate that fishing charters and (fishing) lodges together account for about 70% of the gross sales. Collectively, kayaking, and wildlife viewing accounts for at least 15% of the sales. This is partial survey of the industry (hence conservative), however it is noted that total revenue from the operators surveyed is similar in magnitude to room revenue of $8 million in 2000. This provides a perspective on the current size of this part of the tourism sector.

Information is available on guided freshwater fishing, which provides an indication of the more important water bodies to the sector.

Figure 4.4: Distribution of Guided Fishing Days by Waterbody (3,916 days)



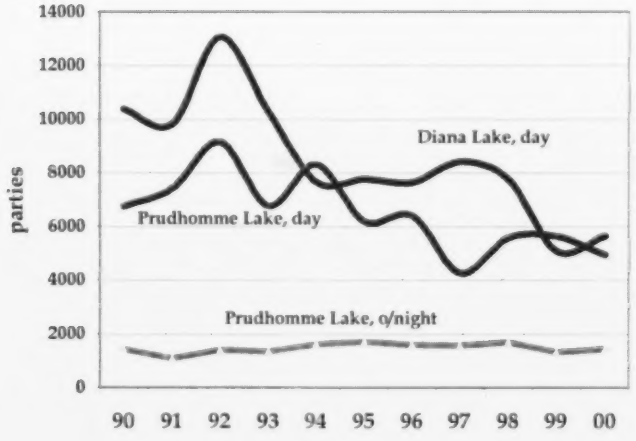
4.2.2 Recreation

The *Recreation Resource Analysis Report* identified 367 recreational sites in the Plan Area. About 30 sites were inland, most around the Skeena River corridor. The remaining sites are located on the shoreline, accessed

by boat. Approximately half of the coastal sites are adjacent to a protected moorage or anchorage. The primary activity for about one third of the is water sports, such as beach activities, kayaking and scuba diving or motorized boating. About 100 sites feature camping activities. These sites range from developed forest service recreation sites to sites with no development, but perhaps a water source and a flat area to pitch a tent.

The *Recreation Resource Analysis Report* presented the number of user days/site as an indicator of the relative value of the recreation site. There were 13 sites in the highest use category (i.e. 2,500 user/days per year) and 7 sites in the next highest (1,000-2,500). These sites are located near Prince Rupert or along the Skeena River on the mudflats, which are popular recreational fishing locations. Generally, the proximity to Prince Rupert or Kitimat increases the level of use. The sites that were more than one day's travel from these major centres tended to receive much lower use. About 85% of the sites were in the lowest use category (0-200 user days/year).

Recreation activity in the Plan Area occurs primarily in the summer season, with a diminishing level in the shoulder seasons. This relates to the compatibility of the activity and the weather conditions during the summer months (i.e. lower precipitation, light winds, warmer). Day use statistics for Diana Lake and Pruhomme Lake provincial parks in 2000 indicate that about 60% of the annual visitations occur in the months of July and August.

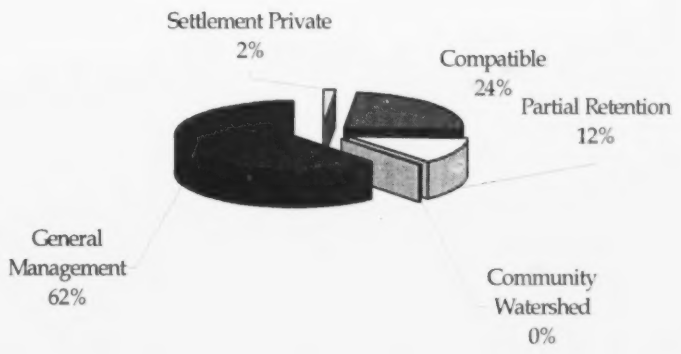


The trend in day use visitors to the two provincial park facilities has been declining in recent years as indicated in **Figure 4.5.** Nearly 90% of the day users are BC residents, probably a large proportion from the Plan Area. The decline in use in recent years may be attributable to generally wet summers in recent years as well as declining population and poor economic prospects that were impacting the area. The rate of use of the campground at Prudhomme Lake (primarily visitors to the Plan Area) is relatively constant over the period. The slight dip in use in 1999 is likely because of the increase in camping fees instituted in that year. On average, about 40% of the overnight users are visitors to BC. There are three marine parks located on the Inside Passage, but no use data is collected.

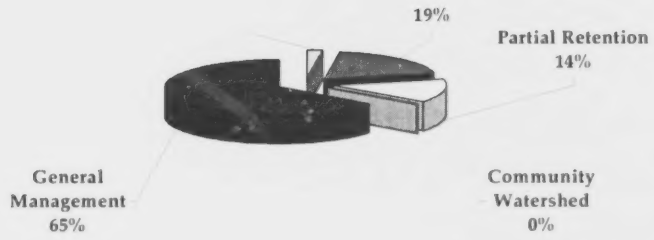
4.2.3 Base Case Management and Outlook for Tourism and Recreation Sectors

The Plan Area's spectacular scenery, diverse and plentiful wildlife populations, diversity of land forms and rich cultural history support a broad range of recreation/tourism opportunities. The Plan Area contains 11 protected areas and ecological reserves, which cover 52,796 ha. (3%) of the Plan Area. The Plan Area also contains several hiking trails and other infrastructure supporting recreation and tourism activities. Areas suitable for kayaking, hut to hut touring, marine cruises and lodges, and wildlife viewing are identified in the *Resource Analysis Report.* The sites currently support, or could in the future support, commercial and public recreation activities. To the extent the suitable areas are located in compatible base case land management zones broadly suggests the future capacity for these activities (hence economic activity) to increase in the future.

It is a challenge finding adequate indictors for objectively quantifying tourism/recreation interests. This is because of the wide array of elements that comprise the experience (i.e. visual, noise, sense of isolation, etc.), that are both subjective, site and time specific, and difficult to quantify. Nor is the experience itself captured in a discrete, identifiable market transaction. For mid and back country experiences, visual quality is an important ingredient of the experience and there are objective methods of measurement. The Visual Landscape Inventory (VLI) is the best available indicator . The VLI compiles information about viewing conditions, biophysical characteristics, and sensitivity to visible landscape alteration (*Visual Resource Analysis for the North Coast LRMP, Resource Analysis Report*). The inventory has been completed for the five scenic areas, covering some 435,000 ha. The inventory classifies 286,000 ha. as very high and high visual sensitivity rating. These two classes indicate landscapes that people would be very concerned if visually altered. Given the base case management regime, about one quarter of the land is subject to management regime clearly compatible with maintaining the attribute (preservation and retention VQO's). Some 60% of the lands are in General Management, which may not be compatible with maintaining visual attributes.



Timber harvesting is probably the most likely activity that could compromise the visual attribute, if not appropriately managed. Of the very high and high VLI lands inventoried, about 33,000 ha. (or 12% of this category of lands) is located in the THLB. Presently, about 65% of the visually sensitive land is subject to general management, which may not be adequate to protect the value.



VLI of Existing facilities' buffer lands		
VLI rating	hectares	percent
very high sensitivity	28530	46%
high sensitivity	13707	22%
moderate sensitivity	10236	16%
low sensitivity	1998	3%
no sensitivity	7595	12%
total inventoried	62066	100%

Additional analysis completed by MSRM (*Tourism Resource Analysis Part 2*) examined the extent the visual quality of existing facilities and lands with high tourism/recreation suitability might fare given the base case management regime. With respect to the 140 existing facilities, a viewshed or buffer was notionally placed around clusters of facilities. This buffer area totals some 139,000 ha. Within this buffer zone, only about 62,100 ha (or 45%) has a VLI sensitivity rating. Nevertheless, almost 70% of the lands inventoried has assigned a Very High to High sensitivity rating as summarised in the following table.

That is, the valuable attribute to the tourism operations appears to be reasonably recognised by the current inventory.

The THLB overlays only about 11,000 hectares of the 138,000 ha. buffer area. Most of the land is either not forested or excluded from the land base. Preservation and retention VQO management applies to 15,000 ha. This suggests (at this aggregate level of analysis) that

timber harvesting on these sensitive lands would be managed to the most demanding visual objectives under the base case management regime.

Tourism suitability is an indicator of the sector's potential. In this case tourism corresponds to adventure travel and eco-tourism (e.g. kayaking, hut-to-hut, wildlife viewing and lodges). The analysis identified some 250,000 ha. with high to moderate tourism suitability. About 110,000 ha. of this land base is included in the VLI inventory. For most of the lands subject to the VLI inventory, the visual sensitivity is recognised. About 65% of the inventoried land is assigned a very high to high sensitivity ranking.

VLI of Tourism Suitability lands

VLI rating	*hectares*	*percent*
very high sensitivity	39,193	36%
high sensitivity	31,902	29%
moderate sensitivity	22,984	21%
low sensitivity	2,903	3%
no sensitivity	13,331	12%
total inventoried	110,313	100%

The THLB overlays some 27,000 ha. (11%) of the high to moderate suitable lands. However, at this time about 8,000 ha., or about one third is subject to preservation (919 ha) and retention (7,130 ha) VQO management objectives. On the assumption that the application of VQO's in the base case is not modified (in response to future tourism facility development) then there will be some erosion of tourism potential, if the potential is sensitive to landscape modifications arising from timber harvesting.

Outlook: The outlook for the sector is continued growth, given broad trends in the demographics, the growing awareness of British Columbia's tourism amenities, as well as word of mouth from satisfied visitors. Saltwater fishing will continue to be strong (provided fish stocks are sufficient). The sector could expand substantially, in terms economic output, employment, and contribution to the Plan Area economy if cruise ships begin calling regularly to Prince Rupert in significant numbers. This future growth will put pressure on the Plan Area's existing tourism infrastructure, and increasingly pose challenges for the management of mid and back country activates to maintain product quality.

With regard to future trends in public recreation, the resource analysis report indicates a relatively high number of recreation sites, but only a small number of them receive much use presently. This can be attributed to limited accessibility (i.e. water access only) as well as the relatively small population of the region. Features that are popular for commercial tourism are often popular with BC residents, which can create a management challenge at specific locations and certain times. Examples identified in the *Resource Analysis* include Bishops Bay Hot Springs, Lucy Island, and wildlife viewing in Khutzeymateen Inlet outside of the park, or whale watching in the Work Channel area. One would expect increasing recreation use as the local economy begins to grow again, which in turn will stimulate increased population growth.

Future interest will probably continue to be toward marine based activities, such as the development of marine trail networks for small boats or non-motorized boats (e.g. kayaks) that incorporate safe anchorage's, camp sites and fresh water supplies The analysis of the base case management regime (particularly with respect to timber harvesting) indicates that at the plan level this opportunity continues to be available.

4.3 Forest Sector

This section provides an overview of the forest industry reliant on the Plan Area's commercial timber resource, and its contribution to the Plan Area and provincial economy. The forest sector includes planning and harvesting activities, silviculture, and wood processing (i.e. pulp and sawmills). Ancillary activities, such as transportation and the supply of materials and services to support the direct activities are not addressed here. The following section presents the base case management regime and the long term timber supply forecast associated with this regime. This is followed by a discussion of the sector's performance in recent years. The outlook for the sector, given the base case management regime is discussed in the final section.

4.3.1 Description of Resource and Base Case Management

The Plan Area encompasses a diverse landscape, ranging from floodplains adjacent to the many rivers and fjords, steep mountain slopes topped by glaciers. The majority of the land base lies in the Coastal Western Hemlock biogeoclimatic zone, which is characterised by high rainfall, cool summers and mild winters. The important commercial tree species are western hemlock, western redcedar, balsam, sitka spruce and yellow cedar. To date, all of the industrial harvest is of old-growth stands. Most of the harvesting has occurred in the alluvial valley bottoms and lower slopes of the adjacent mountainsides.

The Plan Area land base that can support industrial forest operations is estimated to be 104,469 hectares. This timber harvesting land base (THLB) is determined after taking into account forest characteristics, development costs and average market values. The THLB is an important determinant for forest planning purposes (e.g. timber supply projections), but from an operational perspective it expands and contracts in response to changing market conditions, changing harvesting technology and the like. The THLB covers about 6% of the Plan Area total land area, and about 16% of the Plan Area's forested lands. Most of the THLB is located at the lower end of river valleys accessed from salt water.

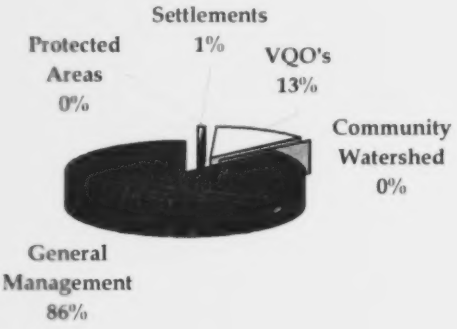
The forest management unit is the North Coast Timber Supply Area (TSA) which is geographically different than the LRMP Plan Area. Relative to the TSA, the Plan Area includes a portion of TFL 25 and excludes Princess Royal Island. The THLB for the North Coast TSA is larger than the Plan Area, at 137,076 hectares. The following discussion of allowable annual cut (AAC) and long term timber harvest forecast corresponds to the TSA landbase. Hence the corresponding values for the Plan Area would be proportionately lower.

Every five years the Chief Forester of the Ministry of Forests is mandated to determine an allowable annual cut (AAC) for every forest management (TSA's and TFL's) unit in BC. This determination takes into account technical analysis provided to him by industry and ministry staff, public input, and a consideration of risks and uncertainties. For the North Coast TSA, the most recent determination took effect January 1, 2001. The AAC was set at 573,624 m3/year (MoF, 2000). This is a reduction from the previous determination of 600,000 m3/yr to account for the reduced THLB following implementation of the Nisga'a Final Agreement and other minor adjustments.

The Chief Forester expressed concern of the lack of recent harvest history in the THLB north of the Nass River and in the highly visually sensitive areas (e.g. Inside Passage). The THLB north of the Nass is characterized by a higher proportion of hemlock, low productivity sites, harsher climate and more rugged terrain relative to where harvesting is occurring in southern areas. The concern was that 100% of the harvest is occurring on 70% of the THLB. In order to demonstrate whether these areas represent economically viable harvest opportunities (hence should remain in the THLB) the determination geographically partitioned the AAC :

Conventional	419,624 m3
Geographical location	154,000 m3
Total AAC	573,624 m3

Figure 4.8; Distribution of THLB by Base Case Management Unit



Subsequent determinations will review the harvest experience in these geographical locations.

Among the risks and uncertainties the Chief Forester considered, he noted that a very conservative view of productivity on managed stands was used in the technical analysis. He indicated his expectation that productivity was probably higher, which could "massively offset any downward pressures on timber supply"[33].

[33] Page 69, *North Coast Timber Supply Area, Rationale for AAC Determination*

Apportionment of North Coast TSA AAC

Tenure	Holder	Annual volume (m3)
Forest License/Replaceable		
A16841	International Forest	226,617
A16820	Triumph Timber Ltd.	153,377
A16838	Boyle and Dean Logging	20,156
A16837	Thomson Industries Ltd.	30,696
	Total Replaceable	430,846
Small Business Forest Enterprise		134,082
Woodlot Licence		6,000
Forest Service Reserve		6,000
Tree Farm License 25 (block	Western	Not included
Total Commitment North Coast TSA		600,000

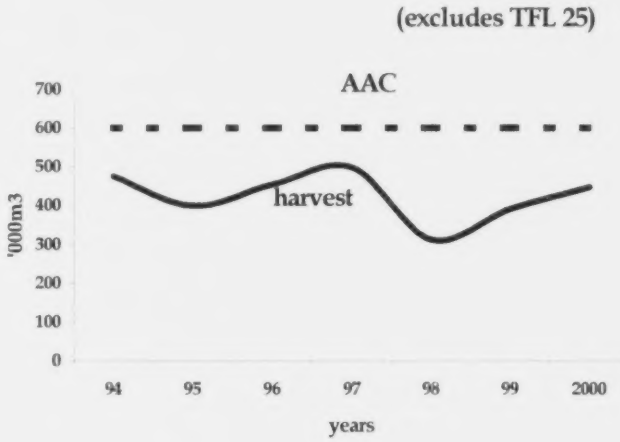
Source: Ministry of Forests Apportionment System (2002-03-25)

With respect to forest management, the Base Case is a continuation of the current management regime. As shown in the adjacent figure, a large proportion of the THLB will remain under the general management conditions. The remainder is essentially located in visually sensitive lands.

The base case timber supply forecast provided by MoF indicated the current AAC could be maintained for the next 6 decades then begin to decline. The general longer term outlook presented here is in the order of 10 to 20 years. That is, for the purposes of this base case the harvest forecast remains at its current level for the outlook period.

4.3.1 Apportionment , recent harvest performance, and log flow

The apportioned AAC is allocated to industry under a variety of forest tenures. The available apportionment record not been adjusted for the reduction in AAC arising from the last AAC determination discussed above.

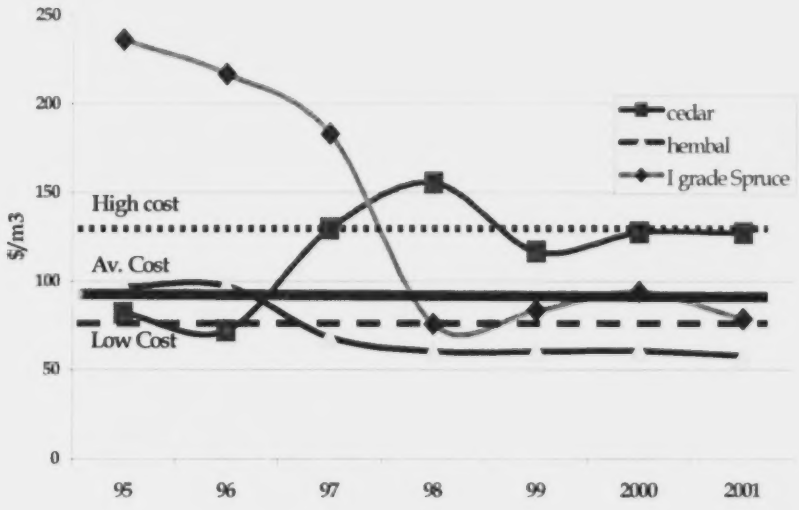


It is evident from the table that three companies (International Forest Products, Triumph Timber Ltd., and Western Forest Products Ltd.) account for almost 90% of the committed volume. Note shown in the table, but included under the Small Business commitment is a 10 year licence issued to the Lax Kw'alaams First Nations in 2000. It is noted that the licensee in this case has planning and silviculture responsibilities which is not typical of a license issued under the SBFEP.

Actual harvest volume may diverge from that stipulated in the license, although licensees were under an obligation to harvest the license volume over the cut control period. Through most of the 1990's the billed volumes were generally below the maximum level, particularly in the latter part of the decade as shown in **Figure 4.9.** A small volume is harvested periodically from private land.

The harvest fluctuations evident in the figure can be traced to a combination of factors, most of which impacted British Columbia coastal forest industry generally. During the early to mid-1990's the Japanese market for green hemlock was very strong, commanding high prices and substantial volumes were shipped. In the mid-1990's lumber and pulp prices were strong and generally rising. Pulp prices peaked in early 1996 before falling sharply. The Japanese market for green hemlock balsam species contracted with the changes in the domestic building code. The softwood lumber dispute with the US, the international market boycott and unresolved land use issues were also noted as contributing factors. These events contributed to the closure of the North West Timber sawmill (West Fraser Ltd.), and the curtailment/closure of Skeena Cellulose pulp mill in Prince Rupert and sawmills in the interior northwest. These mills were important markets for local logging companies and their closure had economic ramifications throughout the region.

Figure 4.10: Average Log Prices and Delivered Log Costs



The North Coast's relatively difficult terrain, remoteness, and relatively high proportion of poor quality wood result in generally high development and logging costs. However, the timber is also characterised by large, high quality logs in a variety of species that yield a high proportion of clear and appearance grade lumber which obtain premium prices. The primary

species harvested are hemlock/balsam (60%[34]), cedar (23%) and spruce (14%). The log prices of these three species (average Vancouver log market prices) relative to a range of harvest costs is shown in **Figure 4.10** to give and indication of profitability for recent years. To a degree, licensees can manage the impact of falling log values by harvesting lower cost sites. Nevertheless, it is noted that average price for hemlock/balsam in recent years has been less than even the lower cost areas in the Plan Area. It is evident that this was a period of poor profitability (as suggested by average log prices less a representative range of harvesting costs).

It was the case that during the latter 1990's the major licensees in the North Coast were sustaining significant losses. Collectively, they were scaling back operations and in an effort to maintain a reasonable level of harvest employment, most of the companies[35] negotiated Economic Plans pursuant to the *Job Protection Act* . Among the terms, the government permitted a level of round log exports (typically 50% of the harvest). At present, round log exports are permitted on a case by case basis as the domestic market for North Coast logs remains weak because of continuing market difficulties.

In the spring of 2002 there were no major timber processing plants operating in the Plan Area A small portion of the harvest is sorted at Ridley Island and exported or sold to Northwest mills located in Terrace. Most of the harvest is transported by water to southern BC and sold to mills or processed in the licensee's own facilities. Before the SCI pulp mill shut down it took about 20% of the Plan Area's harvest (MoF, 1999). The company was recently purchased by NW BC Timber and Pulp Ltd., which has indicated the intention to re-start the pulp mill. Provided this facility commences operations one might expected the mill to consume a similar level of the north coast harvest.

4.3.2 Overview of Industry Participants

The recent harvest history of the four major licensees is summarised in the table, with addition background provided in the brief company profiles.

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[34] Averaged over volume billed in years 1999 and 2000.
[35] Economic plans were negotiated with Interfor, Boyle and Dean, West Fraser Timber (assigned to Triumph Timber), and Skeena Cellulose.

Major Licensee Harvest History (m3)

	1998	*1999*	*2000*	*2001*
International Forest Products	176,587	179,059	122,081	217,820
Triumph Timber Ltd.	100,442	126,850	118,093	107,929
Boyle & Dean Logging Ltd.	-	-	16,108	18,571
Thomson Industries Ltd.	22,261	31,367	-	17
Total licensees	301,288	339,275	258,282	346,338

Note: excludes Grade Z waste and rejects
Source: MoF Harvest Billing Report System

International Forest Products Ltd (Interfor) has substantial operations in coastal BC. On the coast it holds 4 tree farm licenses, 10 replaceable forest licences with an aggregate AAC of about 2.5 million cubic meters, and 36 timber licenses (Interfor, 2001). It operates six sawmills and 6 remanufacturing plants in south coastal BC. It also holds 1 forest license (AAC of 250,000 m3), several timber licences, and operates 1 saw mill in interior BC. Coast wide, the company and its contractors employ about 1,700 persons in its logging operations. The company sells lumber, wood chips and logs. It primary markets are (in order of percentage of 2000 sales) the Pacific Rim, US, Canada, and Europe.

The company's Plan Area harvesting operations are managed out of its Terrace based office. The bulk of its operating areas are south of the Skeena River (see Map 9) where it operates two remote logging camps (Scotia River and Kumealon). (The company reported direct employment in its Northwest operation to be in the order of 164 jobs which includes forestry, engineering, and assessments). The company has pioneered helicopter logging in BC. Presently about 30% of the company's Plan Area harvest utilises this system and this may expand marginally in the future. The company is experimenting to determine economically viable methods for harvesting from the visually sensitive Inside Passage corridor.

The company's coastal forestland operations have achieved registration under the ISO14001 standard, and in 2001 certified under the Sustainable Forestry Initiative (America Pulp and Paper Association). In May 2000, the company received the Millenium Business Award for Environmental Achievement presented by the United Nations Environmental Programme and the International Chamber of Commerce.

Triumph Timber Ltd purchased forest licence (A16820) from West Fraser Mills. The transfer was approved by the Minister of Forest in August 2000. At the time of the sale this license was the only forest tenure held directly by the company. The company does not own or operate a wood processing facility in BC.

The licence volume is drawn from two operating areas, Chambers Creek (south of the Nass River) and Triumph Bay (Douglas Channel). The respective harvest volumes from the two areas are in the order of 60,000m3 and 90,000m3 per year. Under the terms of the license transfer, Triumph continues to honour the existing logging contract with the Lax Kw'alaams First Nations to harvest 60,000 m3/yr. from the Chambers Creek operating area. This volume is transported to Prince Rupert where it is sorted. Depending on market conditions, the volume is sold locally (e.g. Terrace mills) and on the Vancouver log market. With respect to the harvest volume from the southern area, about 40% is barged to southeast BC markets. The remainder is towed to Ridley Island log sort where it is exported or sold locally. The company employs 20-30 people at the Triumph Bay operation.

Boyle & Dean Logging Ltd. has been operating in the North Coast since 1988. This is the company's sole forest license in BC. Because of the rough terrain and high cost of logging in its operating area coupled with low log prices the company did not harvest in the late 1990's (Job Protection Commission, 2000). When at full operations the company employs 15 persons. Most of its harvest is sold on the Vancouver log market to various coastal pulp and saw mills.

Thomson Industries Ltd. is similar in scale and type of operation to Boyle and Dean. At full operations it employs 5 persons in harvesting and administration and 4 in silviculture activities. Roughly 80% of the harvest volume is sold on the Vancouver log market or exported.

Western Forest Products Ltd. is an operating unit of Doman Industries Limited. The company has an annual timber harvest on the coast of some 4 million cubic metres and operates a number of saw mills and two pulp mills. Western holds TFL 25, of which a small portion is located in the Plan Area. The company's activities on this small land unit are not included in this overview.

Small Business Forest Enterprise Program (SBFEP) makes standing timber available to individuals and small mill owners through non-renewable timber sales. The objectives of the program are to provide opportunities for entry to the industry, generate employment and to encourage diversification in further manufacturing.

The program is administered from the North Coast district office in Prince Rupert. Its apportionment is 134,082 m3/yr. but the volume billed in recent years has been well below the apportionment.

Small Business Harvest (in '000 cubic metres)

year	94	95	96	97	98	99	00
Billed in Year of harvest	62	84	48	22	4	44	171

Source: Ministry of Forest

The program has been affected by external market forces that were impacting the coast industry generally during this period. The closure of the North Coast Timber saw mill, and more particularly SCI meant small business operators had no local market for the pulp

component of the harvest. Given the significant pulp component, this has substantially reduced the financial viability of prospective timber sales.

Since 1992, 88 timber sales have occurred totaling some 600,000 cubic metres. Of the 88 sales, about 35 (40%) were awarded to north coast contractors, 23 (25%) to northwest contractors, and the remainder were usually lower mainland based operators. Regardless of the location of the operator, the actual logging is generally done by loggers resident in the northwest (living in Terrace/Kitimat to QCI). Eleven of the sales were Section 21 sales (i.e. value added sales). Of these, 5 were awarded to Prince Rupert operations (45%), 3 to northwest processors (30%) and the remained to lower mainland processors. It is noted that very small local processors (e.g. door maker) often are not registered in the program as the sales offered may not suit their needs, or is beyond their financial capacity. The very small operators may rely on the Small Scale Salvage Program for their supply.

Skeena Cellulose Inc. (current owner NW BC Timber and Pulp Ltd.) has been an important company in the Northwest's integrated forest industry. It does not hold a forest license in the Plan Area, but when its pulp mill in Prince Rupert was operating it drew some 25%-30% of its raw material requirements (round logs and chips) from the North Coast TSA (MoF, 1999). Chips were purchased from the West Fraser's North Coast timber mill (since closed) and the Ridley Island log sort. Historically, the pulp mill was the largest single industrial employer in Prince Rupert. The company holds forest tenures totallying some 2.4million cubic metres located in the Kalum, Kispiox, Nass and Bulkley Timber Supply Areas, and TFL No. 1 . The company also operated three sawmills and a whole log chipper in the Terrace/Smither corridor. Fully operational the company directly employed about 2,400 persons in the region. Following purchase of the company by NW BC Timber and Pulp Ltd. there is (at the time of writing) ambiguity with respect to the extent operations will return to former level. This will depend on market conditions as well as the new owner reaching suitable agreements with its employees and contractors.

4.3.3 Economic Contribution from harvesting North Coast Forest Resource

The North Coast forest sector contributes to the Plan Area and provincial economy. It supports employment and incomes and contributes to government revenues. Its significance to the Plan Area economy was evident in reviewing the performance of the local economy in the latter half of the 1990's when the sector was experiencing difficulties. However, it is also noted that while SCI was the largest industrial employer in the Plan Area, about 25-30% of its fiber supply was from the North Coast. In recent years, a large proportion of the economic impacts attributable to the North Coast harvest occur in south-east BC, where most of the harvest is processed.

The gross value of the Plan Area log harvest in 2001 is estimated at $32 million, delivered to Vancouver and before milling. This revenue is distributed to the Plan Area and the province through payments to labour, contractors, suppliers, taxes, and the like. The employment and income ramifications attributable to the North Coast TSA harvest were examined in the most

recent timber supply review[36]. In the course of that work, industry, and ministry sources were contacted with regard to direct employment, income and government revenue generated from the harvest. The economic dependency impact ratios estimated by the Ministry of Finance provide an estimate of the "spin-off" impacts. One should refer to the TSR report for a full discussion of the assumptions and limitations the methods. Here, we have adopted the method and made minor adjustments to better reflect 2001 conditions. Adjustments included the closure of Plan Area mills, log export accounting for 25% of the harvest, and an update of average values. The following table summarises the various economic indicator values at the recent average harvest volume of 417 thousand cubic metres.

Economic Indicator Values at Average Harvest Volume (417,000 m3)

Indicator	Plan Area	Province
Employment (in full time equivalent job)		
Direct	52	352
Dependent	29	425
Total	81	776
Total After Tax Income/yr. ($ millions/yr.)	$ 2.60	$ 23.52
Government Revenue ($ millions/yr.)		
Stumpage and rent		$ 3.25
Income Tax		$ 2.44
Other		$ 1.73
Total		$ 7.42

The North Coast contribution is included in the provincial totals shown in the table. Based on the industry survey results in the TSR and interviews completed for this work, about 30% of the harvesting and silviculture work is completed by Plan Area residents. It is noted that the above table does not include the economic contribution of small log salvage operations and small processors. Since the current AAC can be maintained for the next several decades, the sector's economic contribution could increase from that shown in the table if economic conditions supported the full harvest volume (addressed in next section).

4.3.4 Outlook under base case management regime: The past decade or so has been a tumultuous period for the Plan Area's forest industry, as it was for the entire coastal industry. Early in the period, international lumber and pulp markets were very strong, and product prices were increasing. A modern saw mill commenced operating in Prince Rupert, and the Skeena Cellulose pulp mill was operating. In 1996, it is estimated that about 20% of the Plan

[36] The TSR Soci-Economic Analysis is contained in Chapter 7 and appendices of the *North Coast Timber Supply Area Analysis Report*".

Area employment was dependent on the forest industry. An accumulation of adverse circumstances began to weigh on the coast industry in the mid-1990's which were noted earlier. Industry representatives also cite a range of government policies implemented during the period that increased uncertainty and/or costs, including the protected area initiative, higher stumpage charges, implementation of the *Forest Practices Code*, and the settlement of native land claim. By 2001, both the wood processing mills in Prince Rupert were closed, for many harvesting sites the cost to harvest timber exceeded its market value, and all of the major operators were depending on log exports to support their operations. While external market conditions remain difficult, the expected resumption of SCI's operations may signal a turnaround for the Plan Area's forest industries.

The industry's outlook over the next 5-10 years suggests more of the same. That is, a high degree of change will continue (and perhaps accelerate), creating both uncertainties and opportunities. Forest product markets are dynamic (changing product lines and cyclical demand) and BC coastal producers must continue to respond to these changes, whilst vying with domestic and international competitors. In addition to these market driven factors, coastal operation must be responsive to fundamental changes in forest management initiated by the provincial government. While these changes are not entirely known at this time, key features include:

- Breaking the link between forest management and timber processing
- Providing easier entry and exit to the industry
- Removal of the requirement to harvest uneconomic timber
- Development of a market-based pricing system

In the near future the industry is expected to be operating under a "results-based" Forest Practices Code (British Columbia, 2002). To the extent the changes bring operating efficiencies (i.e. lower cost to meet the desired forest management outcomes) the changes should enhance operator's competitive position. Objectives and strategies will be articulated at the landscape level and control the location and intensity of forest development. The objectives and strategies are to be expressed in measurable outcomes were possible. This should bring greater clarity (i.e. reduced uncertainty) to industry.

The coast forest industry, in a recent appraisal, was characterised as facing declining raw material supply, excess manufacturing capacity, and obsolete equipment (Pearse, 2001). The assessment went to speculate that a decade from now (if the coastal industry is to regain its economic health), there may be about half the number of current coastal mills operating, and those mills would be modern and highly efficient. Also, an increasing proportion of the BC coast harvest will be from second growth forests. In this context, the high quality old growth timber in the Plan Area that is economic to harvest under the prevailing economic conditions will continue to be sought. Similarly, the uneconomic stands will not be harvested. The "Timbershed Study" should provide the Table some guidance regarding the industry's priority harvesting pattern across the timber harvesting land base.

The base case regime is silent with respect to the granting of new forest tenures, and the settlement of native land claims in the Plan Area. The ability to do this is limited in that the current AAC is presently fully committed. Nevertheless, the future may include the issuance forest tenure to First Nations and non-First Nation communities. These types of tenure may differ from those issued to industry, as non-timber management objectives may obtain greater emphasis. There is not sufficient information to measurably reflect the implications of this in the base case. It is noted that the LRMP can potentially provide a supporting context for such tenures (e.g. specify community forest tenure area) as well as integrate (or balance) the tenure's management objectives across the Plan Area . With the settlement of land claims, the LRMP can potentially provide a framework for co-ordinated management.

With respect to non-timber forest products, there is some interest in mosses and the recovery of taxol, but these are not well advanced at this time.

The likelihood of a the Plan Area sustaining a modern saw mill will depend on the region's comparative advantage relative to competing locations. Proximity to the raw material (in the North Coast and adjacent management units), available industrial land, an experienced labour force and Prince Rupert's good port facility and rail links are advantages, particularly for serving Pacific Rim markets. However, the industry (i.e. primary and secondary processing operations) is well established in the south coastal area, and water transport from the Plan Area to the south coast is secure and relatively low cost. With respect to the LRMP, given the greater prominence economic considerations will be allowed to play in determining the siting of new mill capacity, it is not evident how the plan could have a significant direct influence on the investment decision.

For the purposes of the Base Case projection of employment and incomes, it is assumed that the SCI pulp mill will commence operation and the North Coast will regain its historic share of raw material supply. It is also assumed no major saw mill will operate in the Plan Area in the base case (i.e. the associated economic impacts occur in the province rather than the Plan Area). To the extent round log exports become a significant (i.e. greater than 25%) and permanent disposition of the Plan Area harvest, the forest industries employment/income impacts are overstated .

Economic Indicator Values at AAC Harvest Volume (573,624 m3/yr.)

	Plan Area	Province
Employment (in full time equivalent job)		
Direct	72	484
Dependent	40	584
Total	112	1068
Total After Tax Incomes/yr	$ 3.5	$ 32.4
Government Revenue ($ millions/yr)		
Stumpage and rent		$ 4.5
Income Tax		$ 4.6
Other		$ 2.4
Total		$ 11.5

The economic indicators corresponding to the base case harvest forecast are proportionately higher than the values shown earlier, because the full AAC harvest is

assumed, rather than the recent average harvest volume. Implicit in the estimate of employment is the continuation of current technology and constant productivity. If the industry modernises (e.g. becomes more efficient) these ratios may be expected to decline overtime (i.e. less employment at probably higher average income). Nevertheless, the estimate provides a reasonable benchmark for identifying the implications of the Table's proposed plan(s).

4.4 Mineral and Energy Sector

4.4.1 Introduction

The Plan Area contains a rich endowment of metallic and industrial mineral deposits. This is evidenced by deposits that have been discovered, and in some instances developed into operating mines. During the past century, 23 mines have recorded production (i.e. past producers) and another 22 have identified reserves (i.e. developed prospects) that could be developed given suitable conditions. In the past, deposits have been mined by underground (e.g. Dolly Varden to the north of Alice Arm) and open pit methods (e.g. the molybdenum mine near Kitsault). The majority of the known metallic mineral deposits are located in the northern portion of the Plan Area,. This has one of the highest concentrations of metallic mineral deposits in the province. Other concentrations of known mineral deposits are located in the Ecstall River area and the coast. Known industrial mineral deposits (limestone, silica, etc.) are located close to tidewater, as inexpensive transport is an important factor to establishing an economically viable operation. Presently, one industrial mineral operation is processing waste from the former Anyox smelter. At current processing rate the operating life is some 50 years.

The *Current Conditions Report* and the *Minerals and Energy Resource Analysis Report* collectively provide a good description of the resource value as it is presently understood, and the history of mineral development activities in the Plan Area. This section expands on the socio-economic aspects of mineral development and the outlook for the sector given the base case management regime. The Plan Area's on-shore oil and gas potential and geothermal potentials were addressed in above two reports. The potential as presently identified is not large, and are not addressed further in this report.

Because the mineral resource is hidden, its distribution and concentration of resource value can not be located with the same degree of certainty as say, forest values or important recreation features. Although mineral potential is predictable on a regional scale (10's to 100's of square kilometres), the location of an individual deposit on local scale (10's of meters) is far less predictable . As well, the rugged terrain and limited infrastructure of the North Coast compound the difficulty of finding the resource and increase costs. The uncertainty of not knowing exactly where an economic deposit is situated and the high cost of searching for it pose unique challenges to the mining industry risking scarce investment capital, and the Crown intending to encourage development of the public resource. Typically, multiple exploration efforts occurring over years and decades are required to

locate a deposit worth mining. Exploration efforts, even "failed ones" may advance industry's understanding of the geology, resulting in reassessment of targets that can lead to eventual discoveries. There is ample evidence of this process at work in the Plan Area.

Not knowing when or where future mines will be located poses a unique challenge to planning and resource management on the Crown land base. Other considerations include:

- mining is a "temporary use" of the land, although the duration of land use varies considerably from a few weeks for exploration to many years for large operating mines, and its after-effects can be long lasting;
- long-term access to large tracts of lands is required to find the mineral deposits located within;
- exploration and mining activities and their impacts are generally limited to relatively small areas;
- a mine can be highly prolific source of Crown revenue, private profit and economic impacts during its operating life; and
- comprehensive environmental approval processes and reclamation laws apply to all mining developments.

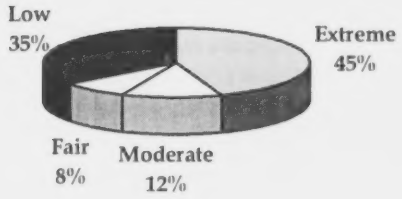
It is also the case that the product of an operating mining is subject to cyclical demand with the commodity's price set in the international market. This is no different for the Plan Area's basic industries (i.e. forest products, tourism, commercial fishing. However, it is noted that over the past decade metal prices have been relatively low, which has lead to a reduction in exploration expenditures worldwide as well as in British Columbia.

As noted above, presently there is only one mine operating in the Plan Area. At the 1996 Census, no North Coast residents were recorded as employed in the mining industry. The next section introduces the several indicators used to describe the Plan Area's mineral resource. The final section utilizes the indicators to describe the base case management regime and provide an outlook for the sector.

4.4.2 Mineral Indicators

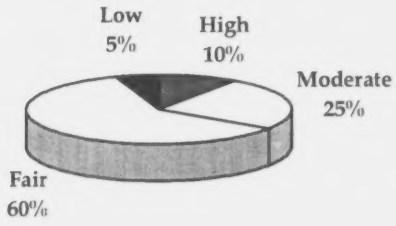
Broadly, two bodies of information are used to describe the extent of the Plan Area's mineral resource; undiscovered mineral potential and recorded industry activity. Undiscovered mineral potential is expert opinion of the relative likelihood of economic deposits being located within geologically homogenous tracts of land. Recorded industry activity (i.e. such as land under mineral tenure, number and location of past producers) is location specific and indicates the spatial distribution and intensity of industry efforts. Given the iterative character of mineral development, future mineral development often occurs on previously explored lands.

Figure 4.11: Undiscovered Metalic Mineral Potential



Large tracts of the Plan Area are considered to have very high metallic mineral potential (i.e. precious metals such as gold and silver, and base metals such as copper, lead, zinc). **Figure 4.11** summarizes mineral potential for the entire Plan Area. While it is possible to find economic deposits in any category of land, there is a higher probability in the higher potential tracts. Forty five percent (almost 750,000 ha.) are deemed to have extremely high metallic mineral potential. The next potential category is high, but there are no lands in that category in the Plan Area. The most prospective tracts are located in Anyox/Kitsault/Stewart area, the Ecstall/Scotia valleys, plus the coastal islands (Map 10). A recent report from the Geological Survey Branch indicates the geological setting of the Anyox and Kitsault area is identical to that of Eskay Creek mine area (*Resource Analysis Report).* The metallic potential is with respect to gold, silver, lead, copper, molybdenum and zinc.

Figure 4.12: Undiscovered Industrial Mineral Potential



The industrial mineral potential appears to be more limited, as indicated in the figure. Limestone, silica, mica are the more likely industrial minerals for future development

The location of actual industry activity is shown on Map 12 and the following table. This information is a consideration in the determination of undiscovered mineral potential , so it not surprising that the patterns on the land base are similar. That is, the concentration of claims, exploration expenditure, etc. are in the northern area of the Plan Area, and to a lesser extent the coastal islands and Ecstall/Scotia valleys. Also, it is noted that a number of new claims have been staked in the Anyox and Kitsault area and the Ecstall River valley since the data cut-off for this analysis.

Summary of Mineral Indicators

Indicator	*Indicator value*	
Mineral Claims	89, 144 ha.	
AIRES Expenditure	$ 17,934,351	
	Metallic	**Industrial**
Producers	0	1
Past Producer (#)	18	5
Number of Developed Prospects	19	3
Number of Prospects	18	0
Number of Showings	180	33

Based on an interpretation of the mineral potential, the Ministry of Energy and Mines apply a probabilistic method to predict the number and types of economic deposits located in the land area. A total of 29 deposits (more than 1 deposits may comprise a mine) at the 90% confidence level are predicted for the Plan Area. The most likely deposits are polylmetalic, gold, gold/silver. Recent field work and re-assessment will be available in the future which might change this prediction.

4.4.3 Sector Outlook and Base Case Management Regime

A vibrant mining sector depends on the mineral endowment, favourable economic conditions, and supporting government policy framework. The mineral potential and record of industry successes confirm that the Plan Area is highly prospective. Economic conditions, particularly metal prices, have reduced industry revenues available for exploration and focussed effort toward the search for large, low cost deposits. With respect to government policy framework, a survey of industry executives has ranked British Columbia the least attractive jurisdiction for the past five years (Fraser Institute, 2002)[37]. The factors cited for this opinion included:

- environmental regulation
- land claims uncertainty

[37] Survey of 45 jurisdictions (see Figure 1). Chile achieved the highest relative rating of 85. British Columbi index value is 14, behind Russia (20), Kazakastan (21), Zimbabwe (22). Other provinces received relatively high ratings, i.e. Alberta (82), Ontario (78) and Quebec (78) .

- protected area uncertainty
- uncertainty in the administration, interpretation, and enforcement of regulations

Recent changes to government policy include a 20% flow-through share tax credit, cutting tax rates for the sales tax, capital tax, and income tax, and the promise to cut regulations by one-third. However, uncertainty with respect to the settlement of native land claims may blunt the simulative effect of these changes (*Financial Post*, 2002).

The Base Case management regime is essentially a continuation of current management regime except were future changes are reasonably anticipated. In principle, it would address the protected area uncertainty, and there may be some enhancement in the regulatory framework. However, it would appear that until land claim settlement obtains greater clarity, or is completed, exploration effort will be less than might otherwise be the case. Nevertheless, a prerequisite for increased industry activity is for suitable economic conditions.

Distribution of Mineral Potential by Base Case Management Zone

	Settlements, Private	Protected Areas	Preservation Retention	Partial Retention	Community Watershed	General Management (incl. TFL 25)
Metallic Mineral Potential						
Extreme	0.6%	0.6%	3.5%	4.8%	0.0%	90.5%
Moderate	0	0%	5%	9%	0%	81%
Industrial Mineral Potential						
High	0.1%	2.3%	0.0%	0.0%	0.0%	97.6%
Moderate	2.3%	0.1%	3.1%	4.4%	0.2%	89.9%

The Base Case management regime assumes no new protected area. Outside of protected areas, mineral development activity is allowed subject to the regulatory framework. The regime appears supportive of mineral development activity in the sense that most of the most prospective land, and all of the more advanced properties (i.e. past producers and developed prospects) are in General Management zone. Twenty eight of the twenty nine predicted deposits are located in the General Management zone. It is assumed that the regulatory regime will be predictable, timely, and relatively less onerous in this zone. Mineral exploration and development is not formally subject to visual quality objectives (VQO's). When work is proposed in a particularly sensitive location then the permitting staff will request consideration of these values. There are no tenures and low indicator values in

community watersheds. If exploration occurs in this zone it is regulated by specific guidelines of the Mineral Exploration Code.

Distribution of Mineral Indicators by Base Case Management Zone

	Settlements/ Private	*Protected Areas*	*Preservation/ Retention*	*Partial Retention*	*Community Watershed*	*General Management (incl. TFL 25)*
Mineral Claims	1%	0%	3%	2%	0%	94%
AIRES Expenditure	1%	0%	2%	9%	0%	88%
Metallic						
Past Producer (#)	1	0	0	3	0	14
Developed Prospects (#)	0	0	0	0	0	19
Prospects (#)	0	0	1	0	0	17
Showing (#)	1	0	0	11	0	168
Industrial						
Producers	1	0	0	0	0	0
Past Producer (#)	0	0	0	1	0	4
Developed Prospects (#)	0	0	0	0	0	3
Showing (#)	2	2	4	3	0	21

Informed opinion is that the next mine would likely be developed in the northern region of the Plan Area. This area contains extreme mineral potential and a high concentration of recorded mineral industry activity. Nevertheless, the statement is based on a subjective assessment of probabilities.

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